


REPORT OF THE COMMISSION
ON THE RENOVATION
OF THE EXECUTIVE MANSION



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Magnolias and the White House

From a Letter of
JOHN ADAMS

I Pray Heaven To Bestow
THE BEST OF BLESSINGS ON
This House

November
MDCCC

And All that shall hereafter Inhabit it
May none but Honest and Wise Men ever rule
under This Roof.

Excerpt from a letter written by John Adams



The North Portico

REPORT OF THE COMMISSION ON THE RENOVATION OF THE EXECUTIVE MANSION

MEMBERS OF THE COMMISSION
SENATOR KENNETH D. McKELLAR;
SENATOR EDWARD MARTIN; REPRESENTATIVE J. HARRY McGREGOR;
REPRESENTATIVE LOUIS C. RABAUT;
RICHARD E. DOUGHERTY AND
DOUGLAS W. ORR.

THE EXECUTIVE DIRECTOR FOR THE COMMISSION: MAJOR-GENERAL GLEN E. EDGERTON. SECRETARY OF THE COMMISSION: LORENZO S. WINSLOW

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CONTENTS

	PAGE
Foreword	9
Completed Reconstruction	13
Color Photographs	17
History of the White House	25
Need for Reconstruction	35
Formation of the Commission	43
Reconstruction	49
Interiors	69
Care in Demolition	77
Souvenirs	81
Needs of the President's Office	83
Panel at Ground Floor	85
Appendix	87



THE PRESIDENT

THE VICE PRESIDENT

THE SPEAKER OF THE HOUSE OF REPRESENTATIVES

In accordance with the provisions of Public Law No. 40, 81st Congress, 1st Session, we have the honor to submit this final report of the Commission on Renovation of the Executive Mansion.

Very respectfully

Kenneth L. McKellop.
Chairman

Douglas W. Orr
Vice Chairman

Edmund MacArthur

Samuel A. Roberts

J. Henry McHugh

R. E. Dougherty

September 1952



FOREWORD

THE structural weakening of the White House which became evident a few years ago was a matter of national concern. The White House occupies an important and valued place in the affections of the people of the United States; and when the critical condition of the building was disclosed a widespread anxiety arose. While it is true that certain persons did feel, with some calmness, that the structural difficulties might offer an acceptable excuse for a new executive mansion; yet many more were emotionally concerned that the present building be preserved.

So important was the problem that it became certain that a need existed for the formation of a responsible body which would, after careful study and deliberation, arrive at the best and soundest means of correcting the serious conditions that existed.

Congress, thereupon, with this in mind, authorized by law the formation of the Commission on Renovation of the Executive Mansion. This Commission, when appointed, was faced with the immediate responsi-

bility of deciding between several possible plans for reconstruction—none of them simple, all of them costly and all of them requiring much elapsed time for their execution.

The Commission was fully aware of its pressing obligation to decide correctly. A long disruption of the President's official residential life was unavoidable; and a large, even staggeringly large, expenditure was involved. If after such sacrifice and cost, the decision proved to be wrong and ill-advised, then disappointment, disapproval and bitter criticism would result.

Therefore, striving to leave no facet of the situation unexamined, the Commission collected data, carried on investigation, sought expert advice; bearing always in mind that this definitely must be, not a temporary correction, but a firm and permanent one. At length the data and advice and the results of investigation were in hand. From these, aware of possible opposition but strong in its belief that the conclusion was the best one, the Commission announced its decision to retain intact the historic outer walls and to place the corrective construction within and below these walls.

Careful deliberation was needed to implement this decision and carry it forward. Checking of things already checked, care of valuable outer walls during heavy construction within, exactitude of foundations, exactitude of structural frame, exactitude of dimensions to fit lost rooms which were to return, foresight, and precision—all were needed and were initiated or approved by the Commission over its three-year working period.

From an architectural and structural standpoint the plan adopted has, it seems to the Commission, been the correct and proper one. From a sentimental standpoint there is convincing evidence of strong general

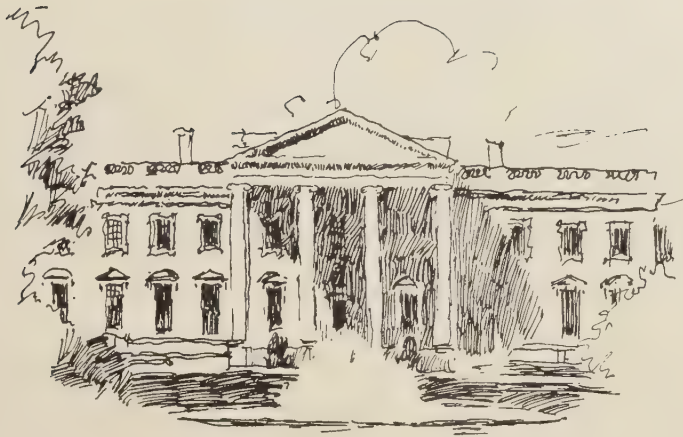
THE WHITE HOUSE

approval, indeed acclaim, for the plan to preserve intact the historic outer walls. As completed, the White House now is an appealing and beautiful structure. It is a matter of satisfaction to the Commission, and it is believed to many others, that the building has become strong and stable and capable of resisting the strains of many years to come.





The New Stair



COMPLETED RECONSTRUCTION

WHILE there is great public interest as to the carefully considered engineering methods which returned the White House to stability and strength, even greater public interest naturally exists as to the inner aspect of the building which, having been completely disassembled, has now been replaced and restored. Comment is therefore being made first upon that phase of the rehabilitation.

It is a point of satisfaction that, though construction necessarily required removal of the entire inner content of the building, yet the interior appearance has been well and faithfully restored in the historic spirit of the house.

The beautiful crystal chandeliers have returned to their accustomed places; the oval rooms, as before, fit snugly into the curve at the south portico; the fine, formal expanse of the East Room and the rich elegance of the State Dining Room have come again into being.

The Commission felt, and results appear to justify its opinion, that certain changes in the decorative idea of the East Room and the State Dining Room, both of which represented the design urge at the time

THE WHITE HOUSE

of the reconstruction of the White House of 1902, would accentuate more clearly the original intent of the rooms.

The East Room, as a result of the 1902 renovation, resplendent in the decoration spirit of the French Renaissance, was simplified to be clearly American and to cleave to the simplicity and elegance of the American spirit.

In the same way the beautiful carved wood of the Dining Room was given new life. Formerly showing a sombre natural finish of the deep dark tone associated with the shadowed great halls of British manor houses, it was felt that the American idea was best expressed by the soft green shades found in American Colonial decoration. The room in these tones assumes a grateful lightness and sunniness.

It was felt also that there was a need for change in the arrangement of the White House main stair. This, in its intent a formal stately approach to the second floor, was previously not visible from the entrance foyer. Its once casual and somewhat awkward position has been rectified. The stair now, seen at once from the entrance, is in a worthy location and has become, as it should be, a graceful point of interest.

In the Library and several other spaces on the ground floor the walls are covered with wood from the structural members formerly supporting the second floor. The charm and sentimental feeling of these spaces thus wainscoted with historic material, gives them a pleasant intimate appeal. Especially is this true of the finely proportioned Library, with its mantel-piece tiles designed under the direction of President Roosevelt. A plaque beside the mantel bears the wording:

“These tiles in the Delft manner, originally intended for the Hyde Park Library, were planned with great Interest and Care by President

Franklin Delano Roosevelt the last year of his life, to be an informal panorama of scenes in the Life of a President of the United States. His death came before their completion and President Truman then had them placed in the White House instead of at Hyde Park.”

It is interesting that the White House should finally arrive, after a hundred and fifty years of step-by-step progress, at completion. It began with occupancy by President John Adams, who found himself in a structure little more than walls and roof, with inadequate heating and lighting, temporary stairs, difficult water supply. But after 14 years, as the building with slow progress was beginning to attain a certain comfort and livability, it was in 1814 with tragic suddenness burned and carried back to its original stage of primitive beginning.

From then on it moved toward, without ever achieving, completeness; a step at a time, losing in structural sturdiness, as future investigations were to show, as it gained in superficial convenience. Gas illumination and the first piped water, in mid century, cut into its structural frame. Later, electricity, more water pipes, central heating, carved more and more at supports once completely adequate.

New comforts and conveniences, as they came, added weight at the same time their installation reduced supporting strength. The aesthetically pleasant remodelling of 1902, inexorably planned to be finished in the summer lull between June and October, later showed the disadvantageous results of haste, impetuous timber cutting and quick construction methods; which made that ambitious effort a step actually away from rather than toward completion.

The new roof of 1927, similarly, was the placing of fireproof construction on supports not originally built to receive such additional

loading. Engineers at the time pointed out this circumstance but money was not available for correction. Hand in hand with new weight went channelling of the walls, reducing support as weight to be supported increased; thus leading on toward eventual structural failure.

It is a tribute to the foresight and unselfishness of President Truman that, in 1949, though but recently awarded further tenancy in the White House, he earnestly advocated thorough reconstruction of the mansion, which would keep him and his family for a long period in the less convenient and less glamorous Blair House across the street, to which he daily journeyed, and which for three years he occupied, with obvious and once proven personal danger to himself.

President Truman expressed himself as desiring the job to be done in so thorough a manner that another President would not, after the lapse of a few years, be faced again with the same problem.

The Executive Mansion was thus at last carried to full completion. It is now a building possessing adequacy for years to come; not only because of its present completeness, but because an understanding has been established as to its inner nature which will cause future architectural and engineering designers to examine thoroughly the construction conditions before altering them to the building's disadvantage. In a certain other sense, it is fortunate that the renovation was completed at this time, since craftsmen skilled to perform much of the fine work in the White House are now scarce. Old age is claiming them, and there is not the need to train young men to replace them.



The NORTH FRONT

The SOUTH FRONT



The EAST ROOM. Showing Portraits of George and Martha Washington,
Redesigned Cornice and Ceiling, Reconstructed Chandeliers and the
Chippendale Sofas



The GREEN ROOM. The Cornice is of the Original Hoban Design.
The Adam Mantel with Delicately Carved Caryatids is one of the Italian
Marble Mantels ordered by Hoban in 1816





The BLUE ROOM. The Walls are of Blue with Gold Decorative Motif.
The Louis XV White and Gold Mantel was Purchased for the White House
by Stanford White



The RED ROOM. This Room Has the Hoban White Marble Mantel Similar to that in the Green Room and Cornice of the Original Hoban Design



The STATE DINING ROOM. A Room of Warm Dignity with Silver Chandelier, and Pleasant Light Green Walls



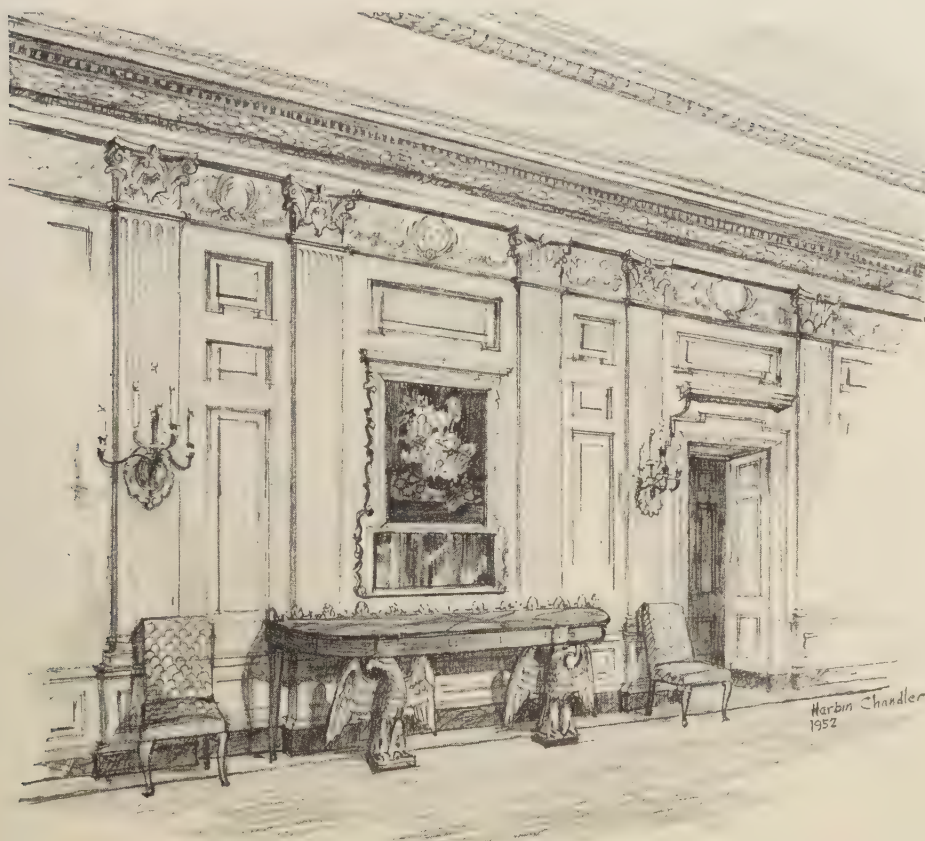
The STAIR. The Stair, in New Location, is a Distinguished Feature
of the Renovation



The LIBRARY. Its Mellow Wood Wainscot Made from the Former
Timbers of the White House. The Tile at the Mantel are the Roosevelt Tile



The LINCOLN ROOM. Victorian Furnishings Preserve the Lincoln Atmosphere



North Wall of State Dining Room

HISTORY OF THE WHITE HOUSE

THE cornerstone of the White House was laid on October 13, 1792 and it was the first public building to be erected in Washington. At the time of its partial completion, in 1800, the city then had a population of 3,210, the nation itself about 5,000,000. The original structure, estimated to cost \$400,000, was designed by James Hoban, who won the assignment in open competition with architects of the day, including Thomas Jefferson, whose plans were submitted

anonymously. The fact of Jefferson's entry did not become known until after his death. In addition to designing the structure, Hoban also supervised its construction.

The size of the Hoban project aroused Congress to immediate criticism. Washington, who had much to do with the selection of the site, advised Hoban to reduce his plans to a more acceptable size. Washington then also took an active hand in directing the building's construction. Even in its reduced size, Jefferson still considered the Mansion "big enough for two emperors, one Pope and the Grand Lama". Funds for construction, obtained from the sale of Government owned lands in the District, and from contributions by Maryland and Virginia, were still insufficient for the work, and so the White House was for a long period only partially completed.

The following letter under date of October 20, 1792, quaintly describes the ceremonies at the laying of the White House corner-stone:

"On Saturday the 13th inst. the first stone was laid in the southwest corner of the President's house, in the city of Washington, by the Free Masons of George-town and its vicinity, who assembled on the occasion. The procession was formed at the Fountain Inn, Georgetown, in the following order viz.:

1. The Free Masons in masonic order.
2. The Commissioners of the Fed. building.
3. Gentlemen of the town and neighborhood.
4. The different artificers, &c.

"They proceeded in procession to the president's square. The ceremony was performed by brother Casanova, master of the lodge, who delivered an oration well adapted to the occasion. Under the stone

THE WHITE HOUSE

was laid a plate of polished brass, with the following inscription:

‘This first stone of the President’s House was laid the 13th day of October, 1792, and in the 17th year of the Independence of the United States of America.

George Washington, President.

Thomas Johnson,)

Doctor Stewart,) Commissioners.

Daniel Carroll,)

James Hoban, Architect.

Collen Williamson, Master-Mason

Vivat Republica’

“After the ceremony was performed they returned, in regular order to Mr. Sutter’s Fountain Inn, where an elegant dinner was provided, and the following toasts given in honor of the day:

1. The fifteen United States
2. The President of the United States
3. Our worthy brothers.
4. District of Columbia: may it flourish as the center of the political and commercial interests of America.
5. The city of Washington; may time render it worthy of the name it bears.
6. Constitutional liberties of the people of the United States of America.
7. The French nation: a happy issue to their struggles for liberty and justice.
8. Marquis de la Fayette.
9. The masonic brethren throughout the universe.
10. The Rights of Man and the author of Common Sense.

THE WHITE HOUSE

11. The fair daughters of America.
 12. The memory of those who bled in the cause of liberty.
 13. General Wayne and the western army: may their efforts be crowned by a speedy and honorable peace.
 14. The governor and state of Maryland.
 15. The governor and state of Virginia.
 16. May peace, liberty and order extend from pole to pole.
- "The whole concluded with the greatest harmony and order."

The building was first occupied by President and Mrs. John Adams in November 1800, some eight years after the corner-stone was laid. At the time of its occupancy, some of the interior, notably the East Room, was not completed. Water was carried by hand into the house from a spring in Franklin Park, a distance of about five city blocks. There were no bathrooms, and Mrs. Adams wrote that "we had not the least fence, yard or other convenience without, and the great unfinished audience room, I made a drying room of, —nor were there enough 'lusters' or lamps, so candles were stuck here and there fore light—neither the chief staircase nor the outer steps were completed, so the family had to enter the house by temporary wooden stairs and platform."

Confirming Mrs. Adams' statement that the East Room was used "as a drying room", there is an incident concerning Henrietta Thomas Bentley, the lady who later was to act as hostess to James Madison on the day when the White House was burned and the President fled to the Bentley home in Brookeville, Maryland. Henrietta, a close friend of Dolly Madison, one day called at the White House and Dolly, who was also a Quaker, took her into the East Room to show her, drying on the line, her Quaker caps "which she had clear-starched herself".

THE WHITE HOUSE

In its early day, the White House was thus poorly equipped, even as to conveniences common to the time. Mrs. Adams complained of the great difficulty of keeping fires going in open grates "to secure us from the daily agues" and the absence of call bells "to assist us in this great castle." It is noteworthy that as late as 1853 certain corners of the Mansion were still cold and drafty. Of one, President Andrew Jackson was allegedly moved to remark that "Hell itself couldn't heat that corner."

In 1807, when he became President, Thomas Jefferson, assisted by the architect, Benjamin H. Latrobe, developed plans for the addition of the North and South Porticoes, and of the East and West Terraces. The terraces made provision for service quarters on each side of the house, and it is recorded that Jefferson himself made these drawings, which showed an arrangement of stables, saddle rooms, ice house and even a hen house disguised behind the classic colonnades.

One might also recall that even at this time the population of the country had risen to only 7 million; and the Washington bureaucracy consisted of but 128 persons. The contrast of government size with that of today has much to do with the functional strain to which the White House, with relatively minor additions, has in later years been called on to withstand.

A fresh start had to be made after the British burned the House on August 24, 1814, the fire destroying the interior and part of the walls. A heavy downpour of rain quickly followed the fire while the masonry was still hot, resulting in much cracking and spalling, evidences of which remained throughout the ensuing years. On this day the President and Dolly Madison, (the first name sometimes quaintly spelled Dolley), disturbed at dinner by the news that the British had entered Washington, fled from the city; she, to Virginia, he "tranquil as usual"

to the Bentley house in Brookeville. There it was necessary for him to stay but a short time. His letter to his wife dated at Brookeville, August 27, 1814, now hanging on the wall of the Bentley house, says in part:

“My dearest:

We pushed on to this place. I have just received a line saying the enemy were out of Washington and were in retreat to their ships, and advising our immediate return. We shall accordingly set out thither.

You will of course take the same resolution. I know not where we are to hide our heads.”

One of the ladies of the party which also took refuge at Brookeville wrote in her diary at this time, “It is not likely that Washington will ever again be the capital of our country.”

This opinion lacked due appraisal of national courage. Without hesitation, without dismay, immediate arrangements for rebuilding both Capitol and White House took shape. Restoration of the White House was begun in 1815 by James Hoban, the original designer and constructor. Except for the East Room, and the North and South Porticoes, restoration was completed in December 1817, when President James Monroe moved in. When finally finished and furnished during the first year of Andrew Jackson’s administration, the East Room contained twenty large mahogany armchairs and four large sofas, all unfinished, and eight pine tables. The South Portico was completed in 1824, but the North Portico was not finished until 1829.

In 1833 a pipe was laid from Franklin Park into the White House to provide running water, but not until 1859 was water piped in from the Potomac River.

Changes to interiors were rather constant with succeeding admin-

istrations. The supervisory care of the building was changed numerous times by executive order from one government agency to another. At no time, insofar as can be learned, had the agency charged with the duty of making alterations or additions had the opportunity to study the building construction and make structural correction.

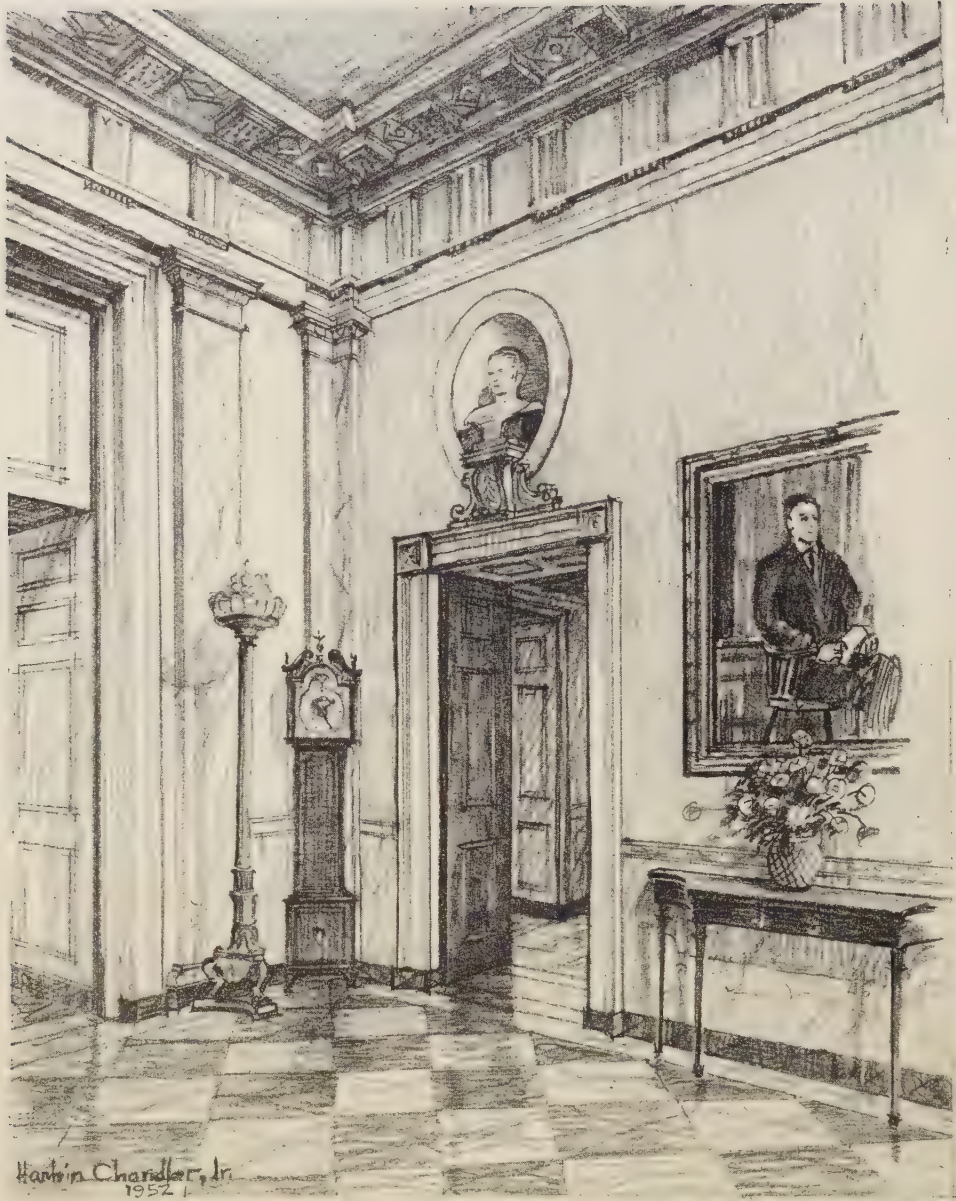
The original interior design concept of the building deteriorated rapidly with various remodellings, and one historian has noted that prior to the alteration of 1902, the East Room resembled the saloon of a Sound Steamer, and the State Dining Room had the decor of a fashionable bar.

Contrary to general belief, the original structure was well built, at least by the standards of that day, and was well reconstructed after the fire. It was adequate, as time has shown, for weights and requirements not too greatly exceeding those it was designed to withstand.

Cabinet and other meetings, held on the second floor close by the President's study, had grown by the time of the War between the States, to such size as to entirely invade the family living space. The area was used freely by secretaries, and office seekers, and the family never really regained privacy in that area, since the quarters were put to more and more concentrated office use as the nation grew in size.

Also, the structure has been constantly subjected to burdens of traffic, inconsistent with original intent. During the times the White House is open to visitors, eight thousand or more sight-seers a day pass through the corridors and state rooms. Large state receptions with as many as 2,000 persons in attendance and even greater crowds at inaugural and New Years receptions, have overburdened the building, putting a heavy strain on structure and equipment.

It was natural that as the mechanical age developed, the White



Clock in First Floor Foyer

House should be provided with modern conveniences. But each time improvements were added, something was sacrificed. Doors, openings and chases were cut, floor joists were bored and altered, always apparently with the idea or hope that there would be enough structure left to support the loads.

The first alteration of major importance after the reconstruction of 1815 occurred in 1902, when, during the administration of Theodore Roosevelt, the main floor was reconstructed and to some extent restored to its original architectural condition. One very significant part of this project was the removal of office functions from the President's residence to "temporary" quarters in a new wing, west of the West Terrace, where they remain today. This separation of residence and executive offices ended the jumble of domestic and official purposes, making the second floor available for sole use as Presidential living quarters and reestablishing the residential character of the building.

With the limited amount of money appropriated for this major renovation, and the limited time, it was not practicable in 1902 to do all of the work that should have been done, and to make a complete and careful examination of the foundations and the main timbers. The principal renovation was the reconstruction of the entire first floor by running steel beams underneath, and by replacing plumbing and electrical wiring. The State Dining Room on the first floor was enlarged by removing a wall, which required the ceiling and floor above to be supported by hanging them from steel trusses in the partition walls above the second floor.

Although the President's living quarters were repaired and modernized, no attempt was then made to replace second floor wooden construction. On the whole, the 1902 renovation corrected only surface

THE WHITE HOUSE

matters, those of a major character being left untouched to develop greater hazard over the years.

The second important change occurred in 1927 when the roof was replaced with steel trusses and a fire resistive third floor installed, the weight of this floor being suspended from the roof trusses. Again, the restricted manner of carrying out this alteration became one of the causes for the radical rebuilding required in the recent reconstruction operation. The old roof structure consisted of large main timbers, spanning from wall to wall, from which the third floor was suspended.

On completion of this alteration, the result was a White House with fire-resistive construction of the first and third stories and roof and, except for an inconsequential amount of non-fireproofed structural steel introduced in 1902, a wood constructed second story dating back to the reconstruction after the fire of 1814.

In this curious blend of adequate and inadequate construction lay the germ of disintegration. As time went on it approached nearer and nearer the line of fatigue, and eventually showed the danger signs which demonstrated the definite necessity for correction.





NEED FOR RECONSTRUCTION

IN January 1948, President Truman became concerned because of a noticeable vibration of the floors in his study on the second floor; and requested the Commissioner of Public Buildings to make a structural survey of the supporting timbers. A cursory examination revealed that some of the timbers under the second floor had been notched out about five inches, causing the uncut portion to receive many times its normal stress.

In February of 1948, therefore, President Truman asked a committee composed of R. E. Dougherty, President of the American Society of Civil Engineers; Douglas W. Orr, President of the American Institute of Architects, and W. E. Reynolds, Commissioner of Public Buildings, to direct an investigation of the structural condition of the White



Cracks in the Northwest Corner and in the North Brick Wall in the West Sitting Room, on the Second Floor, as revealed in investigation prior to the Renovation

House. Lorenzo S. Winslow, White House Architect, and Howell G. Crim, Chief White House Usher, were called in as advisors.

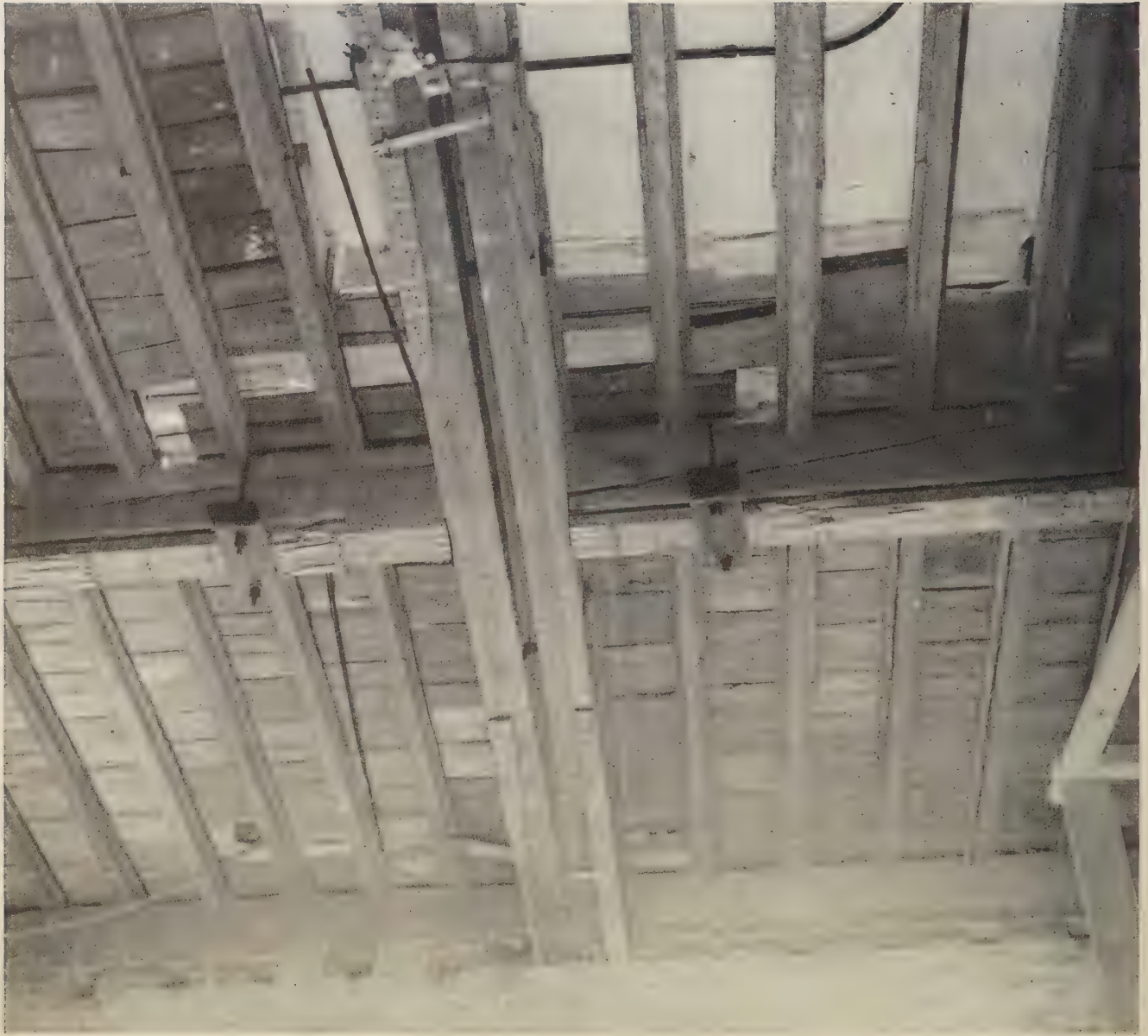
Previous to this date informal investigation had been conducted by Messrs. Barber and Yingling of the staff of the Commissioner of Public Buildings, aided by Messrs. Winslow and Crim.

Even at its first meeting, from preliminary observation, the Committee was concerned with the serious conditions of the structure, and with the very evident fire hazard. It immediately recommended restrictions of loading of the second floor, extreme diligence against fire, and replacement of the combustible second floor at the earliest practicable time. It further recommended that interim repairs be made and that the investigation be continued and pursued as rapidly as could be, with a minimum of inconvenience to the President and his family.

Even just the reconstruction of the second floor would have been a major operation, since all of the fine ceilings of the States Rooms of the first floor were suspended from its combustible floor construction.

As the exploratory investigations continued, the fact soon became apparent that a thoroughgoing examination of the entire structure was indispensable and so, on April 1, 1948, the President asked the Congress to appropriate \$50,000 for that purpose, an appropriation which was approved on May 10.

To conduct this examination, free call was made upon those who had participated in the initial survey, and others, including Edward F. Nield, Architect, of Shreveport, Louisiana. The Public Buildings Service augmented the services of its own staff specialists by assistance from the National Bureau of Standards and the Forest Products Laboratory. Charles B. Spencer, President of Spencer, White and Prentis of New York, was asked for advice when the survey of foundations revealed that



Split in Beam under Room Miss Margaret Truman Occupied as Sitting Room.
Break was the Result of Cutting away Beam at Bearing

the heavy interior bearing walls had settled to an alarming extent.

By September of 1948, it had become obvious that the difficulties were not confined to the second floor alone; but that even more serious faults requiring major operations had in the investigations been unearthed. The new roof and third floor of 1927 put concentrated loads upon interior walls and piers. These walls and piers without adequate or even reasonable footings, bearing as they did on compressible soil, had settled and cracked, a continuing, progressive movement.

This Committee, further, confirmed the fact that the timbers under the second floor were far from adequate for the existing load, and declared that "the building violates principles of good fire engineering practice and presents a definite fire hazard to persons and property."

A clear warning was in the East Room where the sagging of the ceiling plaster and the audible vibration in the area gave convincing evidence of the structural disintegration which was later to be revealed during the early stages of demolition.

So dangerous were conditions that it was considered necessary to evacuate the building at once, close it to visitors, and request the President to take up residence in the Government-owned Blair House across the street.

Therefore, when the President went to Missouri in November of 1948 to vote, the decision was made by him not to return to the White House; and that arrangement should be made in his absence so that upon return he would live in the Blair House for such period as might be required for White House renovation.

The extent and character of the deterioration which the White House had undergone was set forth in considerable detail in a subsequent report to President Truman from W. E. Reynolds, Commissioner,

THE WHITE HOUSE

Public Buildings Service, dated February 7, 1949, which also included a general plan for reconstruction and modernization at an estimated cost of \$5,412,000. A copy of this paper with its enclosures is in the appendix of this report.

Although the funds for the project, requested shortly thereafter, were appropriated to the Federal Works Agency, President Truman favored the establishment of a Commission on Renovation of the Executive Mansion which would exercise general care and supervision of the construction work, including approval of plans and selection of contractors. In so recommending to the Congress on March 25, 1949, the President noted that the commission type of arrangement had previously been utilized in connection with the construction of such national shrines as the Lincoln Memorial and the Jefferson Memorial.

On April 14, 1949, Public Law 40 was enacted establishing the Commission on Renovation of the Executive Mansion according to the President's recommendation. It was stipulated that the Commission should be composed of six members, as follows:

- (1) Two Senators appointed by the President of the Senate;
- (2) Two Representatives appointed by the Speaker of the House of Representatives;
- (3) Two persons appointed by the President of the United States from the Executive Branch or from private life.

Such other personnel as were deemed necessary could be employed by the Commission. In addition to supervising and approving construction, the Commission was given responsibility for the segregation of lumber, furniture and other material removed from the White House which were determined to be of such historical importance that they should without any doubt be permanently preserved. The Commis-



Main Support at Top of Main Stair, Second Floor, under Bearing for T₄ Truss

THE WHITE HOUSE

sion was charged with recommending to the Congress and the President a plan for (1) the preservation of historical material and (2) sale, donation, destruction or other disposition of the remainder in a manner consistent with its symbolical value and without commercial exploitation.

As to what type of operation was to be undertaken—partial demolition, full demolition reusing old materials, or full demolition using new materials—that decision, in the provisions of Public Law 119 enacted June 23, 1949, making available \$5,400,000 for construction and modernization of the White House, was left to the Commission.





Ornament in Private Dining Room

FORMATION OF THE COMMISSION

THE President of the Senate and the Speaker of the House of Representatives each appointed two members from his body to the Commission, while President Truman appointed two members from private life. On June 3, 1949, when the newly appointed Commission met for the first time in the office of the President, the membership was as follows:

Senator Kenneth McKellar, Tennessee

Senator Edward Martin, Pennsylvania

Representative Louis C. Rabaut, Michigan

Representative Frank B. Keefe, Wisconsin

Mr. Richard E. Dougherty, White Plains, New York

Mr. Douglas William Orr, New Haven, Connecticut

At its meeting on June 15, 1949, the Commission elected Senator McKellar as Chairman and Mr. Orr as Vice Chairman. Mr. Orr and Mr. Dougherty were subsequently designated as a Technical Commit-



Photograph of the Commission, taken with the President at its first Meeting, June 3, 1949

Left to right: Senator Martin, Senator McKellar, Mr. Dougherty, The President, Mr. Orr, Representative Rabaut, Representative Keefe

tee. Acting for the Commission on technical matters they screened all data in connection with architectural and engineering matters.

The Commission selected as its Executive Director, Major General Glen E. Edgerton, U. S. Army (Retired), and as Assistant to the Executive Director, Colonel Douglas H. Gillette, Corps of Engineers. Mr. Lorenzo S. Winslow, Architect of the White House, was designated Secretary of the Commission. Mrs. Helen W. Ganss and Mrs. Bernice H. Tidwell were employed in secretarial capacity, and Major James V. Little served as a special assistant to the Executive Director.

Three consultants were appointed to advise the Commission on architectural and engineering matters, as follows:

William Adams Delano, Senior Partner, Delano & Aldrich, Architects, New York City.

Emil H. Praeger, Partner and Chief Engineer, Madigan-Hyland Co., Consulting Engineers, New York City.

Ernest E. Howard, President, Howard, Needles, Tammen & Bergendoff, Consulting Engineers, Kansas City and New York City.

It would be difficult to pay adequate tribute to the three consultants on whose vast experience and expert knowledge the Commission relied during the entire course of operations. All served the Commission with competence, skill and evident pride in being associated with the project; all of which is deserving of appreciative notice.

At the time the Commission completed its activity in 1952, its membership remained as at the start, except that Representative J. Harry McGregor of Ohio had replaced Representative Frank B. Keefe in January of 1951. Representative Keefe, since deceased, was not a member of the 82nd Congress.

The Commission sought to reassess all facts and to approach the

problem without preconceived opinion. All phases were carefully considered from the point of view of architecture, engineering and cost. The problems of maintaining the present structure during any removal of the old were studied in detail. Soil tests were made and load tests conducted on different strata. The condition of exterior walls was examined, to determine how much, if any, these walls might be chased, how they might be anchored to new steel, and how underpinning could best be done.

Drawings and technical data were generally prepared by the Commissioner of Public Buildings and his staff, in conjunction with the White House Architect and his staff, and checked by the Commission's consultants and technical staff.

These investigations revealed the fact that, while there was no conclusive evidence of settlement in the exterior walls, the interior walls, successively supporting more and more load year by year, had settled considerably and, what was critical, were continuing to settle.

It was at length seen that there was no remedy that would solve the problem other than complete removal of the inadequate interior construction; and thereupon carrying all footings down to safer bearing soil. In other words it meant gutting the building—leaving only exterior walls and the fireproof roof and third floor framing.

All consideration and reconsideration showed that such procedure was essential. Since the remedy was so far-reaching and so costly, there was a difficult period of deliberation, resulting in the bringing forward of five plans which resolved themselves under three brackets all pointing toward the remedy and involving the same approximate cost, within about 10 percent, and about the same elapsed construction time.

(1) To preserve in place outer walls, roof and third floor, to remove



Photograph of the Commission, taken with the President, May 1952, at one of the final meetings of the Commission

Left to right: General Edgerton, Representative McGregor, Senator McKellar, Mr. Dougherty, The President, Mr. Orr, Representative Rabaut, Senator Martin

existing interior construction below the 3rd floor; to underpin or extend all walls downward, and thereafter to reconstruct within the house so as to bring it generally to its former condition.

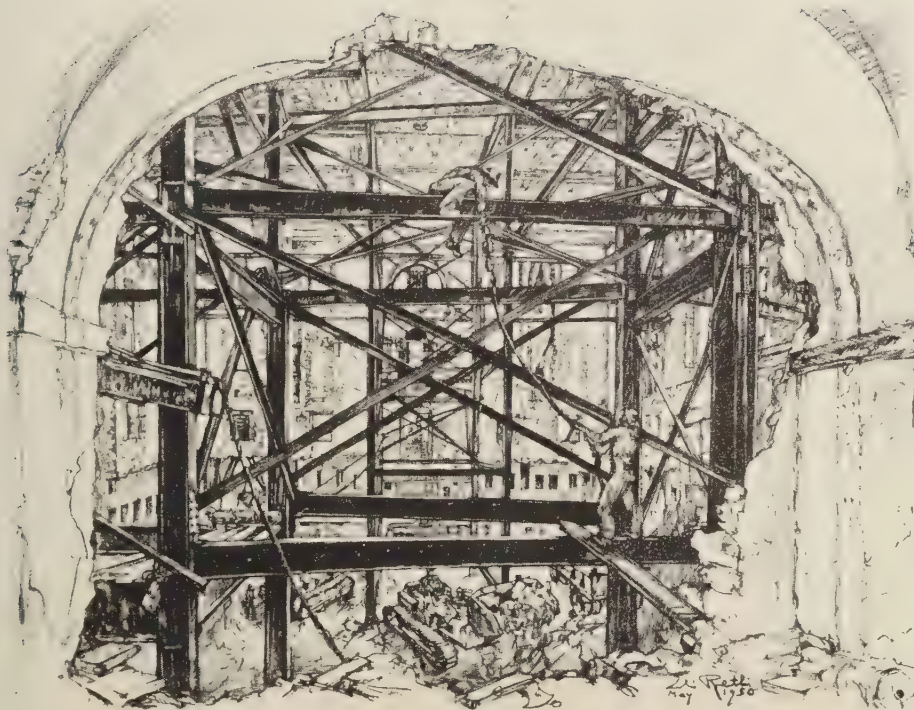
(2) To demolish the building, preserving and storing the exterior stones for later replacement; and to reconstruct the entire building.

(3) To demolish the building without intent to use any of the existing material; and thereafter to reconstruct it, in identical design, of new material, (one plan for marble, one for limestone, one for granite); and to reconstruct within, all as in any new building.

Five careful and detailed estimates were made upon the above: one for retaining exterior walls in place; a second for demolition and reusing exterior materials; a third for demolition and rebuilding in marble; a fourth for demolition and rebuilding in granite, and a fifth for demolition and rebuilding in limestone.

The decision between these plans presented a matter of not inconsiderable complexity, especially since there were involved, not only the construction factors, but the compelling sentimental aspects of the matter. Doubt had been expressed by many who gave study to the problem as to the practicability of salvaging all the exterior stones for reuse. The foundation consultant, Charles B. Spencer, the two engineer consultants, Ernest E. Howard and Emil H. Praeger, the Architect of the White House and the architectural consultant William Adams Delano, all strongly urged retaining the existing exterior walls.

At length, after investigation, deliberation and expert advice, the Commission arrived at a conclusion which has since seemed to receive almost universal approval: to preserve in place the outer walls and to reconstruct the building within, following the same plan and the same general interior design as historically existing before.



RECONSTRUCTION

UNDER the adopted procedure, the Commission functioned as control agency for the Government. The Commissioner of Public Buildings acted as contracting officer, charged with supervising the operations of the general contractor and subcontractors, and paying accounts. His office prepared the structural and mechanical drawings and was responsible for the development of specifications and drawings, in coordination with the White House Architect, who prepared the architectural drawings.

It was necessary, in conformity with the decision to preserve the existing exterior walls, to underpin these walls with concrete piers having footings at varying depths of 24 to 27 feet below the ground level



Construction and Excavation at Northeast Corner

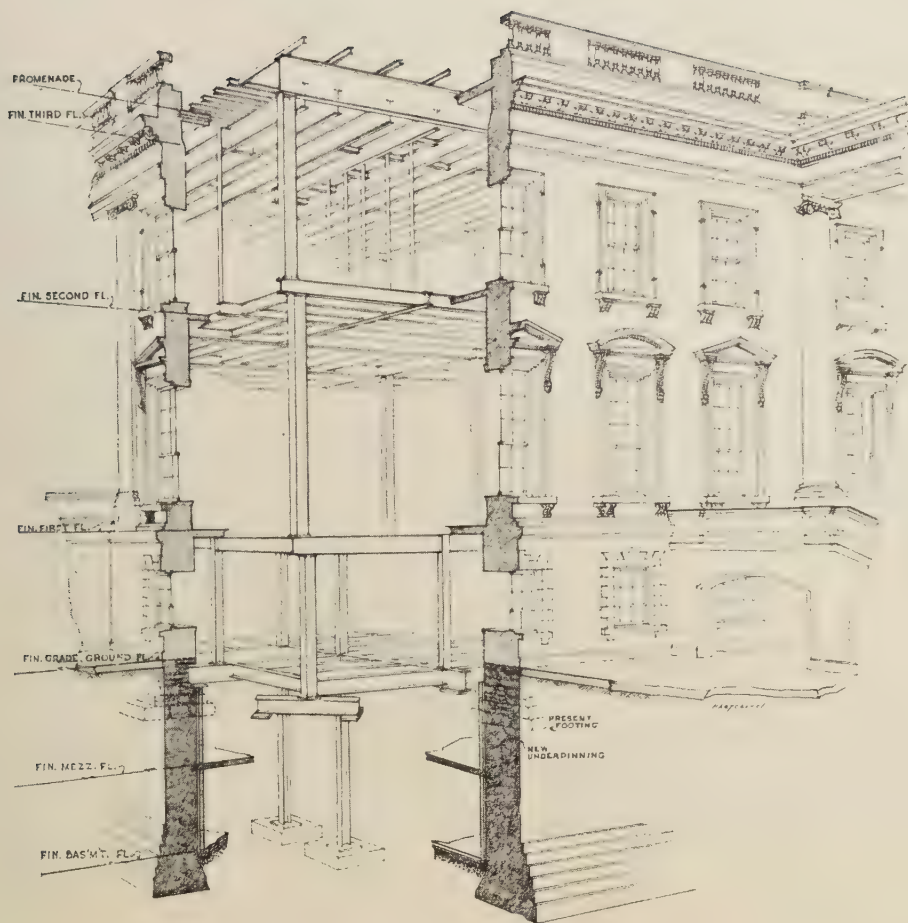


Diagram Showing Wall Underpinning and New Steel Construction

at the front of the building, where bearing was obtained upon a sand and gravel strata, considered to be much superior to the clay upon which the walls formerly rested.

In the work of the contract for renovation, which started on December 7, 1949, the first major step was the underpinning of these outer walls.

The reports on this work were closely examined. Carefully placed marks had been established all around the building and variations in

their elevations during the underpinning operation did not exceed five-sixteenths of an inch in the greatest settlement noted.

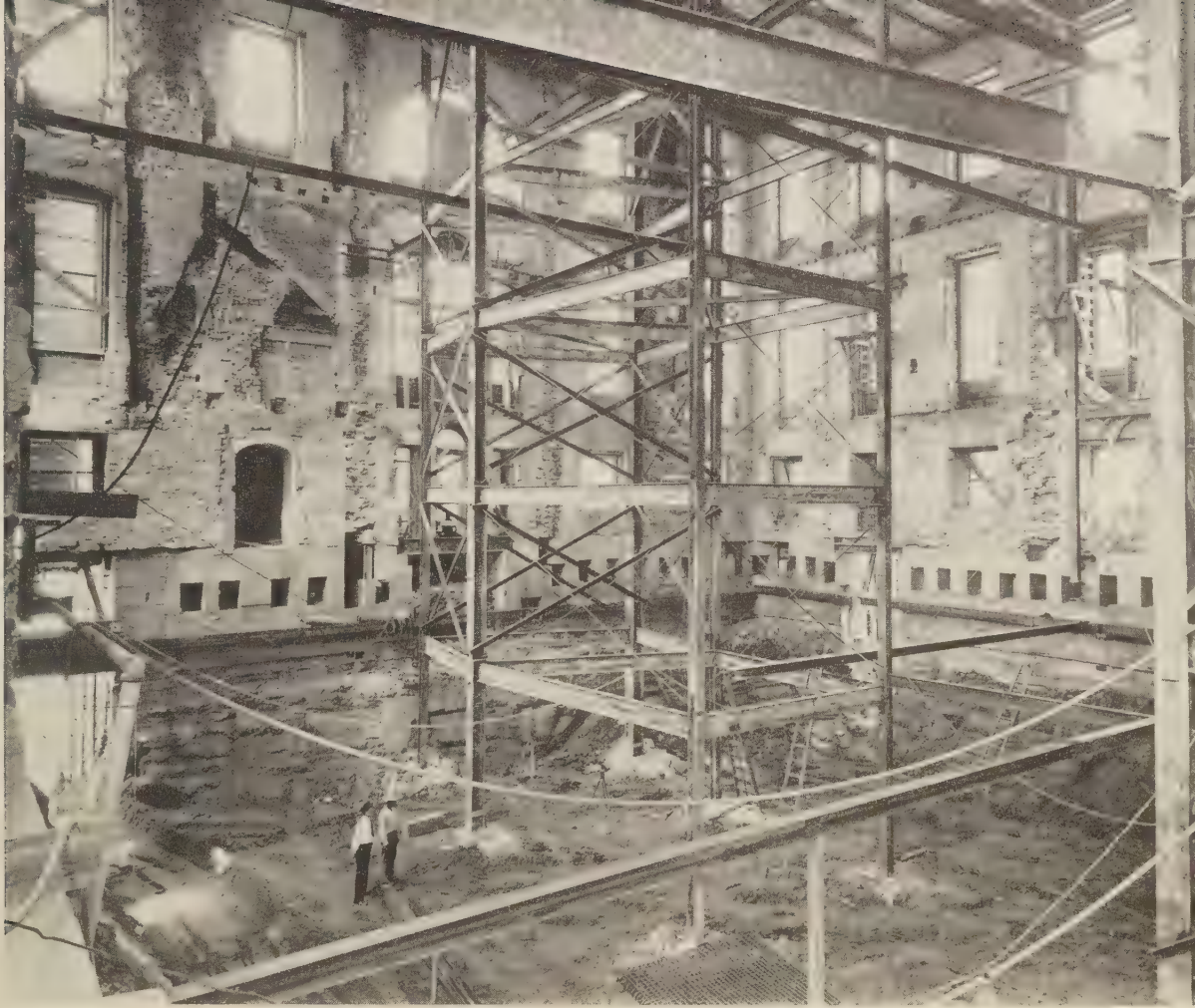
In carrying this underpinning down and in making preparations to carry the new interior column footings down to the same general depth as the wall footings, complete excavation to about that depth was practicable. An advantage appeared in that the excavation thus provided basement space approximately 20 feet in height, which became useful for mechanical equipment, public toilets accessible from the Ground Floor, storage and other purposes. Some of these facilities were included in a basement mezzanine, which proved to be an economical use of space.

The matter of the safe load of the soil at this lower level presented a serious problem. While the soil at the new footing level was sand and gravel of satisfactory bearing quality, it was discovered by borings and test pits that fifteen feet below was a silt stratum about eight feet thick. Concern was felt that settlement might occur, since the wall loads with their deeper footings would now be closer to this layer.

Professor D. M. Burmister, head of the Soils Mechanics Department of Columbia University, whose services were secured by Emil H. Praeger, tested samples and reported as to expected settlement. He submitted a most accurate report and it is of more than usual interest to note that, working at a distance in a laboratory at Columbia University in New York, he was able to predict the actual settlement after construction to within 1/25th of an inch of the settlement as it really occurred.

The investigations proved that no dangerous condition existed in the presence of the silt. Actually the stratum upon which the footings were designed to rest turned out to be of semi-cemented character, offering an even better support than had been anticipated.

The structural design required new footings at this stratum and



Permanent Steel and Temporary Bracing
in Interior of White House

a new supporting structural steel frame was erected on these footings within the existing masonry walls of the building, thus changing it from a wall bearing construction to a modern steel frame. For the most part the columns at the walls were to run within or close to the walls, but in a few cases the walls were cut back to receive the columns.

To give some idea of the full scope of the reconstruction there are listed the steps which were in the beginning set down as diagramming the extent of the work.

These steps were: Underpinning of outer walls; Removal of inner walls and shoring the outer walls and roof; Construction of a steel frame within the outer walls; Supporting all interior loads upon this new steel; Providing a new basement; Replacing all floor construction; Replacing interior partitions and facilities in the ground, first and second floors; Constructing vaults under the front lawn for mechanical equipment; installing modern heating, air-conditioning, plumbing and electrical facilities; Extending elevator to the basement and providing additional elevators; Restoring architectural appearance of the Ground 1st and 2nd floors; Eliminating fire hazards; Maintaining exterior appearance; Rehabilitating North and South Porticoes.

This list required patience, and careful consideration. Someone recently stated that the completed White House was a meritorious accomplishment in interior decoration, missing completely the fact of the critical construction problems that have been overcome.

Precision and care were required in the underpinning. Excavation to the ultimate low level was made under a short section of the wall, the footing and underpinning placed and the operation then repeated on another similar section. In all approximately 126 pits were dug and piers placed. Where this method of underpinning and footing came at

the location of a new steel column later to be installed, suitable footing and pilaster arrangement were made to receive the column.

The designing of the footings and underpinning was a matter of continued and careful study. The first design, in the light of the structural responsibility involved, tended to be somewhat larger and more expensive than need be. But careful rechecking and restudy resulted in more and more refinement to the method and a consequent economy, without loss of efficiency. This earnest, patient and effective restudy is a tribute to the skill and evident conviction, among all who were concerned with the renovation, of the importance of properly reconstructing the valued building.

The razing and removal of all interior construction proceeded concurrently with the progress of the underpinning. As interior walls were removed, temporary struts were installed to protect against any tendency of movement in the outer walls.

The Bureau of Standards made tests upon the stone, the brick and the mortar of the exterior walls to determine their suitability to remain. An investigation had been made as to the strength of the trusses installed in 1927 when the new fireproof roof was installed. Detailed care was given to every phase which might have ultimate effect on the result of the work.

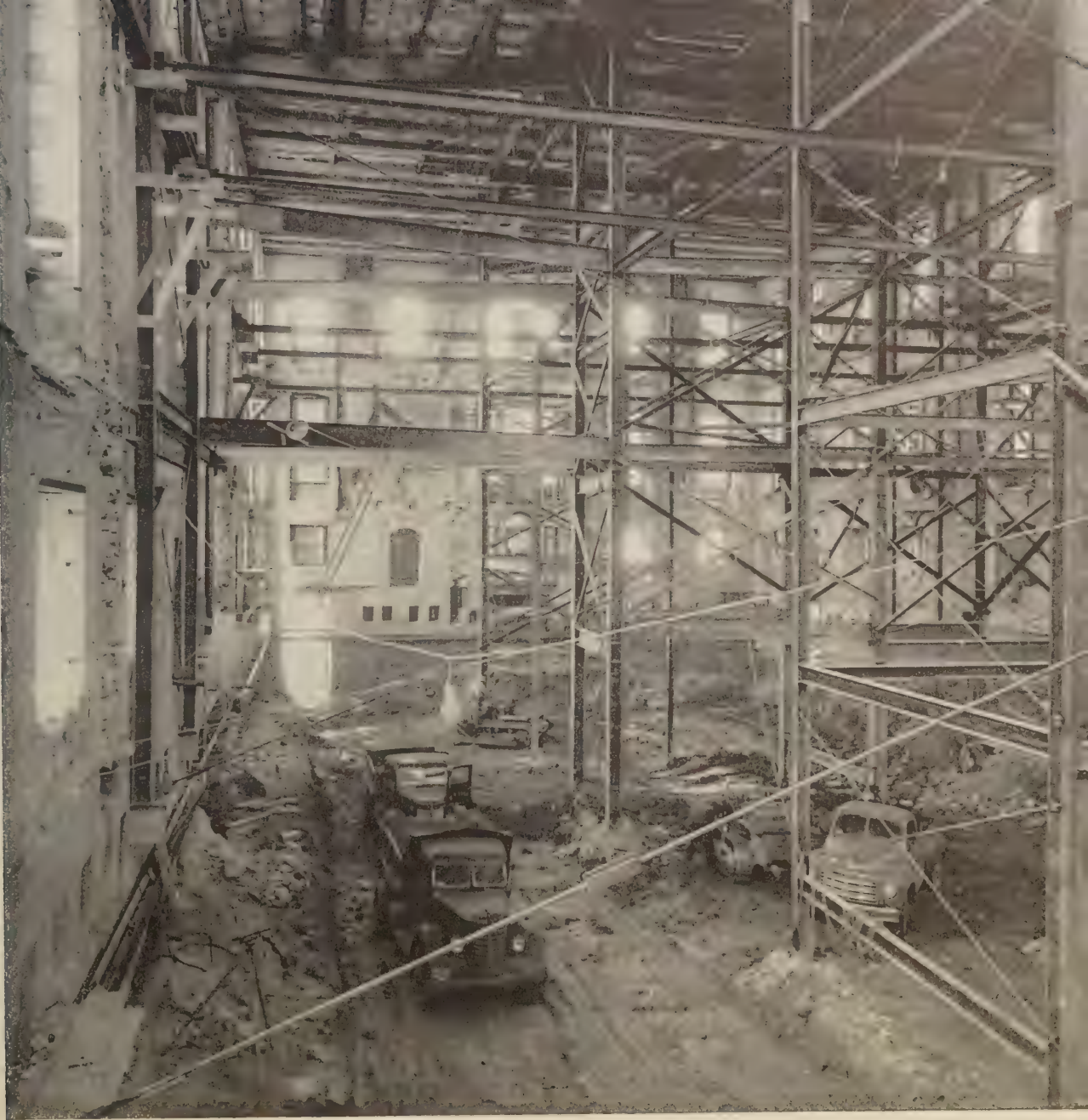
The necessity existed of shoring the exterior walls which were, after the complete removal of all inside construction, without the bracing formerly provided by floors and brick cross partitions.

The heavy fireproof third floor, deprived of its interior wall bearings, had to have temporary supporting construction. This was provided and was later removed as permanent support was installed.

The new floors were to be of reinforced concrete supported upon



Structural Steel Brought in Through Window



Excavation by Bulldozers. Looking West in Interior of White House

the steel frame, to which the outer walls were to be anchored. The walls were strengthened by raking out the joints and repointing them with cement under high air pressure.

These operations within the building, of necessity carried on in piecemeal fashion, involved careful and patient work. But, even though complex and requiring close supervision, the plan to retain the outer walls intact proved to be a satisfactory one, both financially and from the point of view of elapsed time.

Close study was made as to the possibility of making the second floor all on one level, since the raised portion at the east end had always been a disadvantage. But any considerable lowering of that portion of the floor would cut down the stately height of the East Room. At length a restudy of the framing of the floor above the East Room resulted in a design requiring less construction depth, thus enabling the second floor above to be lowered so that an easy ramp could replace the steps that had previously furnished access from lower to upper level.

When the contract for the fabrication of the structural steel was let, the contractor began the preparation and submission of about 350 shop drawings. It became the responsibility of the Commission and those working on the project with the Commission, to check these drawings. As a result of this careful reviewing the fabricated structure showed a satisfying exactitude, which, in view of the cramped conditions of installation, was helpful to the Commission's problem.

The first piece of the final permanent steel construction was placed on February 14, 1950. This was one of the main columns, near the main stairway, a column approximately 22 feet long. Other steel had been erected previously as temporary support. The new column was painted a different color from the temporary steel and thereafter all permanent

and temporary steel followed the scheme of distinguishing colors, to prevent any error, however remote in possibility, in steel removal.

When in December of 1950 the permanent steel frame was fully installed, the building was then generally ready to proceed as in ordinary construction. There was, however, one controlling factor of unusual importance. Final planes of finished interior wall surfaces were fixed by rooms to be reproduced which must retain their historic aspect.

These wall surfaces, in general, could not be broken into nor violated. Therefore the utmost carefulness in structural and mechanical engineering design had to be exercised. Seldom have more strict rules for location of steel, piping, ducts and conduits been laid down, not only in relation to walls, but in relation to floor and ceiling levels, all of which were almost inflexibly fixed.

Limitations are present in the construction of all buildings, but in this case the flexibility that is possible in other buildings simply did not exist. The Commission gave much thought and discussion time to saving an inch here or there by alternate design method. It is an achievement that the heavy steel frame, the air conditioning ducts, the mechanical and electrical equipment piping and conduits should have been installed all within spaces in general set up many years ago, when no thought of such practical necessity and usage was present.

Ducts were fitted, pipes and conduits were installed, slabs were poured, partitions were erected, all with consideration for the time when their location would be an important factor in the exact placing of the important interior finish.

Meanwhile, concurrently with the erection of the structure and the installation of the piping and ducts, the preparation for the interior finish was going on. It was felt necessary to redesign and simplify

much of the plaster-work, particularly the ceilings of the East room and of the State Dining Room, to present a more restrained appearance. The plaster ceilings existing before the renovation, particularly in the East Room, had proved to be too heavy in ornamentation, both from a practical and an aesthetic standpoint. Some of the decorative plaster in the East Room weighed as much as seventy pounds per square foot, which was an actual hazard.

Some of the ornamented plaster was either preserved or exactly reproduced. The cornice mouldings of the entrance hall were very satisfactory and were generally reproduced. In the East Room the Lee Lawrie panels were carefully preserved. One of them was considerably broken as it was removed, but skillful restoration work by the modelling shop made it into a good panel.

Messrs. Winslow, Chandler, Bachschmid, Albright, Wheeler and Galante, of the office of the Architect of the White House, had made in 1948 a measured set of drawings of the interior showing the house as it appeared before the reconstruction.

The State Dining Room, an example of fine interior wood finish, was measured and careful drawings made of its design. When the wood finish was removed, each piece was indicated on these drawings and given a number, and the actual piece given the same number, marked either by painting or by a brass number stapled into the material. In the later replacing of this finish, an astonishing lack of the difficulties which might have been expected, was encountered.

Wood panelling and pilasters fitted the spaces neatly. Air-conditioning ducts were so located in advance that their registers came at the centers of panels. Electric outlets, painstakingly placed, appeared through the finished woodwork in the necessary decorative locations.

In viewing this room one should be impressed with this achievement in recording and replacement.

The Green Room and the Red Room originally had ceilings higher than the Blue Room. Confronted with the problems of air-conditioning, the Commission lowered these three ceilings to a common level and in the space thus gained installed air-conditioning ducts. The room cornices, of the original Hoban design; and the rooms, in spite of or perhaps because of the changes, have a stately grace.

The replacement of the plaster-work represented a difficult problem. To solve this properly a model shop was set up on the grounds of the White House and a competent plaster modelling force recruited, from a profession which, because of the current sparsity of building ornamentation, is dwindling toward eventual non-existence.

In this shop recreating of old cornices and mouldings, or recreating with changes to fit new conditions, took place. In some cases the old plaster, rescued from the building, was so thick as the result of many coats of paint that the character of the mouldings and ornament was completely lost.

An interesting feature was the niches in the Entrance Hall, drawing of one of which appears as a heading to a chapter of this report. As the demolition proceeded it was discovered that the remodelling of 1902 had placed a smaller niche within the original niche without demolishing the former. The Commission felt that the original one was more in keeping and more satisfactory in design than the later one, and careful removal permitted the earlier arrangement to be followed in the completed decorative scheme.

The woodwork as far as possible was preserved. The solid mahogany doors were all removed without mishap, suitably marked and



Hoban's Original 1817 Ornamental Plaster Cornice, High-lighted in Gold,
in First Floor Centre Hall. Shown Exposed Behind 1902 Plaster Cornice



Old Well discovered at the East Wall of the White House. This is One of Two Wells Placed at the Direction of President Jefferson, through the Architect Benjamin Latrobe

returned to place as part of the completed work. In the interest of permanence all the outside sash were replaced with new sash of Honduras mahogany.

The relaying of the parquetry floors was a difficult task. Pattern floors of short pieces in full flooring thickness are not usual in present design practice, and specialists in this type of work had to be brought in, many quite advanced in years because of the fact that younger men are not learning this art.

Following the outbreak of the war in Korea extraordinary increases occurred in the costs of construction work generally, and uncertainties, real or apprehended, soon began to affect seriously the willingness of subcontractors to make forward commitments for work to be done at fixed prices. This attitude was reflected in the responses received to invitations for bids, which declined rapidly in number after the war began. In most instances less than half of the bidders who were invited to bid actually submitted bids; in several instances only one bid was received; and in a few, no bids at all were submitted by the time set for the opening of bids. The reluctance of bidders to make firm proposals appeared also to affect the readiness of those who did bid to accept the specifications as written. Exceptions to the specifications, omissions of items of work, and reservations of various kinds, were usual, rather than unusual, in the bids that were received. In these circumstances the Commission found it necessary to resort frequently to the negotiation of subcontracts, either in whole or in part.

Until shortly after the Korean hostilities, the work was well ahead of schedule. By July 1, 1950, the preparatory work, the dismantling, and underpinning the exterior walls were substantially completed. The temporary shoring and the excavation were not complete, and but

75 percent of the footings for the columns of the steel were finished. The erection of the structural steel which was well under way at the beginning of the fiscal year, was completed in December.

The original contract completion date of September 26, 1951, had a 30 day and certain other minor extensions which brought the required completion date to about the middle of November. The national emergency, as noted above in this report, impaired labor conditions and material procurement so that pressing the work forward toward completion was surrounded with difficulties. A plasterers' strike also further complicated the situation, so that it was March 27, four months behind schedule, before the President was able to move into the White House.

Thus after many months of difficult design discussion, the White House was again restored to its former condition and appearance, with the exception that now, within and unseen, there exists a strong and firm structural supporting framework.

Anonymity envelopes the structural engineer, whose work is later concealed by eye-arresting materials. Buried behind aesthetic surfaces is structural framework. The observer will not be made aware of the difficult discussions that went on as to design of its individual members and their interrelation. Structural engineering, like surgery, is best when the completed work is hidden.

Mr. Ernest E. Howard, consulting engineer for the work, observed that the general scheme provided "a reconstructed and modernized White House of sound and enduring character worthy of its importance to the Nation and to its every tradition" and that the "outer walls which have stood for more than a century—will endure for centuries more." Mr. Emil H. Praeger said the structure "will satisfy all conditions and

the building should have as long and satisfactory a life as is possible to obtain by any method known to me."

Also of importance is the mechanical and electrical engineering of the White House, which was required to have precision and correctness. P. J. Furlong of the Public Buildings Administration put great effort into the design of this work; and actually there are few buildings, no matter how modern in conception, which can boast mechanical and electrical equipment superior to that now in operation in the White House.

The equipment for heating, ventilating and air-conditioning covers a condition of usage quite different from that for the normal building, where there is no extremely great variance in the number of persons using the space. The variation in the White House, however, is from a small number, consisting of the official family and household personnel, to great throngs during visiting hours or at receptions.

Because of the fact that the variation in occupancy occurs to its greatest extent on the ground and first floors, those two floors have separate air-conditioning systems which also take care of heating and ventilating. The living quarters on the second and third floors are supplied by a separate system. The heating on all floors is supplemented by wall convector units, which permit close regulation by thermostat since it was felt that, when outer wraps were discarded and the occupants were relaxed, very positive heat sources were needed.

Refrigeration compressors for the air-conditioning are located in a vault which has been reconstructed under the north drive. These chill water for the air-conditioning systems. Automatic adjustable control maintains a normal temperature of 78 degrees in summer and 72 degrees in other seasons.

There is a system for reception of radio and wired music, either



Excavation East of North Portico for Installation of Air-Conditioning Equipment

from within or without the house. Each room has a telephone-type dial to dial any station and to regulate volume of sound. There are only two fixed television sets, but wiring and conduits for future installations allow instruments to be set up in almost every room. There are on the roof eight antennae, designed to be inconspicuous, six of which are television antennae, one for each local channel. Actually, two television sets have been installed on the second floor, including co-axial cables thereto. Provision also has been made for television and radio broadcasting from certain of the rooms.

Since all piping above the basement is concealed in places where its renewal would be difficult and expensive, brass pipe was used to reduce to a minimum the necessity for getting at the piping for repairs. To furnish uninterrupted water supply duplicate utility services from different streets were brought in, so that in event of failure of the one the other would continue.

In addition there are also kitchen and laundry equipment, vacuum cleaning, incinerator and fire-alarm systems. It is believed, after completion of all phases of the work at the White House, the scheme decided upon to correct structural difficulties and to install services has been such as to justify the effort and study from which it resulted. The New York Herald Tribune, commenting editorially, said, "The Commission members have done well. Heaven alone could have offered them safe refuge had they done otherwise."

INTERIORS



THE most important and best liked space in the White House, because of its stately spaciousness, is the East Room. Careful concern was exercised in its detailed redesign, the spirit being retained, but a certain gentle simplification of its former bold high-relief ornament having been worked out. The gold-plated chandeliers, resplendent in their expanse of crystal, have been equipped with small candle-like bulbs which, when lighted, give a restful and efficiently diffused light. A dimming device makes it possible to reduce their full brilliancy through a range to a pleasant candlelight glow. These chandeliers, formerly very large, have been reduced to a more graceful and appropriate size.

The scheme of the room is white and gold, the caps and other ornamentation being, in general, carved wood instead of cast plaster. The white panelled walls, with their six Lee Lawrie low-relief panels, the quaint eagle over the entrance, together with the restrained patrician ceiling, give an air of fine stateliness.

The hangings at the windows are of a white and lemon-gold silk damask woven from an old example characteristic of many used in the 18th century. Seven pairs of draperies with festooned valences were made and hung beneath the restored old gilded cornices.

Pleasant and rather exciting notes of blue in the otherwise almost completely white and gold decorative scheme are the two upholstered and delicately carved sofas. These are a donation. They were designed by Robert Adam and made by Chippendale. Their carving is exquisite, with ram's head at the two forward legs and with appealing tracery carving in which a lace-like effect is secured by the carving having voids completely through the wood.

These sofas appear below the stately portraits of George and Martha Washington whose delicately designed gold frames now fit into the panelling arrangement. The George Washington Portrait is the one by Gilbert Stuart which Dolly Madison in 1814 removed from its frame and took with her in her hasty flight to Virginia.

The four brownish-red Rouge Antique marble mantels, a little less veined perhaps than might have been wished, are nevertheless a satisfying warm-color note. The room has a feeling of completeness, after passing through years of pine tables and Sound Steamer decor, and seems now to have fully reached achievement.

There is a gentle hush reminiscent of so many great things. In the room stood Lincoln, receiving a long slow cordon of hand-shakers. Far

down the line an impatient man called out, "Mr. President, in my state they say the welfare of the nation depends on God and Abraham Lincoln." To which Lincoln replied, "My friend, you are half-right."

In the adjoining Green Room is the cornice of original Hoban design, to which has been added a delicate Greek fret against the ceiling. There is an Adam mantel in this room and one in the Red Room, similar in design, which were originally in the State Dining Room, and, as shown by a document in the White House, were part of an order in 1816 by Hoban for 24 mantels. This order was through a Baltimore firm for Italian Carrara marble, the carving done by Italian workmen in Leghorn, Italy. The detail is of appealing fineness and grace, particularly the wonderful caryatids supporting the decorated shelf. The floor covering of the room is a hand-tufted rug, reproduced including the President's seal from the old Aubusson rug originally on the floor.

The Blue Room is distinguished by its satisfying oval shape. The mantel is a striking Louis XV white and gold one, purchased by Stanford White at the time of the 1902 remodelling. The crystal chandelier is a gift and, designed to harmonize with it, are the valuable Waterford glass side-lights, each pleasantly surmounted by a glass star. The walls of the room are a blue silk satin material with a large classic motif in gold.

The Red Room, spectacular in its color, has the Hoban white mantel; and the cornice is the original Hoban design with the added Greek fret. Over the mantel is the gilt bronze clock, intricate in its detail and symbolism, presented to the White House by the French Government. As a part of the gift are two quaint gilt-bronze candlesticks.

A sofa dating back to 1850, upholstered now in red to match the room, flanks the fireplace. In this room also is the portrait of Theodore Roosevelt, by Sargeant.



Carved Wood Ornamentation for White House in Cabinet Shop

THE WHITE HOUSE

At the west end is the State Dining Room, somewhat less formal than the East Room, but full of a warm dignity. The great silver chandelier against the gentle green tones of the decorative walls sparkles with myriad of candle-flame small electric lights. On the west wall is the strong simply-designed verde-antique marble mantel.

An especially pleasant note is the soft light green with which the former dark oak panelling has now been painted, giving the room a sunny brightness and intimacy somewhat lacking before.

In the center, under the chandelier, appears the Hepplewhite table, a beautiful thing set with its service and glass. At the north end of the room on the wall table rest the two gold candlesticks and, above, the quaint mirror with the floral still-life painting as a part of it, which were the gift of King George VI.

Adjoining the State Dining Room is the private dining room, a smaller, pleasantly square room which has been faithfully restored. In this is one of the most striking of all the chandeliers, an actual chandelier in that it is not wired for electricity but furnishes light by means of candles. Against the east wall is a fine mirror of the date of 1810.

The Entrance Hall is plain and impressive with no furnishings except two formal walnut Louis XV benches and at the right of the doorway a beautiful grandfather clock, which was a gift to the White House.

The most distinguished phase of the renovation is the formal marble stair, sweeping upwards from the center bay at the east of the Entrance Hall, a beautiful example of monumental stateliness, a decorative improvement over the old stair, which started from the darkness at the east of the transverse hall. At the start of the new stair are the seals of the thirteen original states.

The President's seal is no longer in the floor as heretofore, but is now more appropriately located over the entrance to the oval Blue Room. It is in strong but pleasant color. On the floor inlaid in brass are the four construction and reconstruction dates: 1792, 1817, 1902 and 1952.

The silk damask draperies, which were new just before the closing of the building, have been rehung; and the red chenille rug in the east-west portion of the hall is again in place extending from State Dining Room to East Room.

In the China Room on the ground floor, there is an English bottle once containing rum, found some years ago in the waters outside of Yorktown and dating back to Revolutionary times, which was presented to President Franklin Roosevelt. Though its colors are now beginning to fade somewhat, it shines with a peculiar rainbow iridescence obtained through its century and a half in the deep water.

In the room are interesting examples of all the presidential china from the Washington set to the present. There are also the John Quincy Adams rum glasses and his large pictorial platters.

Surprisingly included in the display are two ornaments made from Dolly Madison's hair. There are pieces of the Madison blue and gold china and that of Lincoln, with lavender border and eagle; a centerpiece from Millard Filmore, a piece of the Polk china and the beautiful Jefferson blue and white soup tureen.

Adjoining is the Diplomatic Reception Room, an oval room with well-designed walls wainscoted with the old wood and painted, resulting in a charmingly dignified small room. It was from this room that President Roosevelt made his Fireside Chats.

Across the hall is the old kitchen made over into a broadcasting room, vaulted and having a stone fireplace at each end. Two courses in

each fireplace are old stones with original Masonic emblems carved on them by workmen who were engaged in the early construction.

Perhaps the most interesting of the ground floor rooms is the Library, a well-proportioned square room, containing a book collection started in President Hoover's time. President Franklin Roosevelt used frequently to visit the room, often bringing his dog Fala and they would both browse among the books.

It is appropriate therefore that at the fireplace in this room are the Roosevelt tile on which design he spent so much time. He wished to have tiles which would represent in aesthetic form scenes in the life of a President. William Hartgroves, of the Public Buildings Service, made pen-and-ink sketches which were transferred, by a seldom-used process, to tile. Intended for the Hyde Park library they were after President Roosevelt's death placed in this location by President Truman.

The main stair, now opening from the lobby, leads to the second floor, where the hall is divided into thirds, the center third being hallway proper and the two ends sitting rooms.

The Oval Room, immediately above the oval Blue Room of the first story, has green walls and green hangings and a new oval rug. Adjoining it, the Monroe Room is distinguished by 18th-century type of fruit-and-flower print in the draperies and the slip covers. The Lincoln Room has a Victorian carpet of yellow roses with green leaves and the general scheme of the room is yellow and green.

The treatment of the second floor expresses informality. The hangings are reproductions of 18th century fabrics. The old furniture of the house has been done over and used, and where new pieces were necessary 18th century reproductions were obtained.

The second floor bathrooms are decorative in color, with struc-

tural glass wainscots and tile floors. The third floor baths are somewhat smaller, strong in color, with tile walls and floor. The third floor bedrooms, smaller than those on the second floor, provide pleasant guest accommodations. They are furnished in a carefully informal manner with 18th century reproductions of furniture and draperies, some of the pieces being reproductions of the Williamsburg Collection.

Renovation of existing furnishings and procurement of additional articles required expert judgment in the examination of existing articles, determination of the nature and cost of repairs and appraisal of the original and the added furnishings. The extraordinary nature of this work was recognized in the law, which authorized exception from the usual requirements of competitive bidding. It was impossible to specify in advance the extent of the work precisely enough to permit competitive bidding. In addition adequate examination by prospective bidders would have been difficult.

Under these circumstances, it was advisable to negotiate a contract for this work to be done by a firm which had previously done work in the White House and during this renovation had stored, cleaned, and cared for, much of the furnishings and hangings. From experience this firm was felt to be well qualified and its completed work in the building supported this premise.

Persons familiar with the White House over a long span of years find the present renovation satisfying. Perhaps one wishes that some of the historic occupants could return to see it: Adams, having lived in it in its most rugged condition; Jefferson, whose hand sought to improve it; Madison, who saw it after burning. Most important of all, one might pause for a moment to wish Abraham Lincoln could see it.



CARE IN DEMOLITION

ONE of the most difficult phases of the work was the careful removal of the materials in the White House. Almost all of these were of irreplaceable value: stone, woodwork, marble mantels, chandeliers, hardware and the many things, hidden and visible, which required preservation for reconstruction and for strong sentimental reasons.

The requirement to remove, mark and store construction and architectural materials does not, when thus simply stated, seem a project of

great difficulties. Yet the average workman, in the matter of demolition of buildings, is trained to use strong tools and muscular power. Breakage in things removed is accepted as axiomatic. If nails, dowels, tenons or cement hold things firmly in place, leverage and muscular persuasion must be brought into play until either the material to be removed or the material which prevents its removal surrenders.

In the usual demolition endeavor, therefore, the result is a very considerable amount of wreckage. A certain percentage of the substances, through intervention of Providence and the inflexible law of averages, emerges from the walls in unbroken condition. A percentage, usually larger, is split, fractured or pulverized by the use of long, heavy-leverage instruments, which, overcoming all adhesion, cohesion, cementation and interlock, result in the material coming free as a unit or as a fragment, either condition being fully satisfactory to the wielder of the instrument.

It became necessary, therefore, for the workmen who attacked White House demolition to gear down power, to install into their strong hands the delicate jeweller's touch. As one of the contractor's foremen remarked, if a workman selected for the demolition procedure proved to be of too heavy gesture and firm intent, resulting in breakage, he was transferred to be pilot of a wheelbarrow, where the tissues of the arms and legs became of greater importance than the tissues of the brain.

By such a process of elimination and replacement, the delicate touch came to the forefront. Percentage of loss dropped. Precious materials came from their firm location in unbroken and reusable form. Fragile finishes, placed by original builders to stay until Gabriel's call, emerged smoothly. Wood panelling, mortised and tenoned with the tight skill of a former age, was persuasively loosened.



Southwest Corner of East Room Showing Careful Removal of Materials

Chandeliers descended without catastrophe. Plaster ornamentation was skillfully removed, or casts were made of it. As skill and training increased, greater feats of legerdemain were performed.

Carrara marble mantels in the Green and Red Rooms, of an almost egg-shell fragility, were persuaded from their supporting walls with a minimum of damage; and, as they now stand replaced in original position, they have the serene air of having never been removed.

Generously ornamented ceilings of the first floor rooms, symbols of a period of more patient craftsmanship, were faithfully diagrammed, and taken down. They were restudied and redesigned to give delicacy; and in new form canopy the rooms beneath.

The crystal chandeliers, also, preserving the stateliness of that other era, were detached with patience, and were, in some instances, remodelled by understanding craftsmen. Restored to position, they hang with sparkle and the difficult phases of removal, burial and resurrection are by no means apparent.

This phase of the work, together with the painstaking librarian's touch which catalogued, filed and stored the things removed, is an unheralded and little praised effort. Yet this rebuilding of sentiment into accurate restoration, by use of the actual materials formerly in place, is the result of the patience and the carefully acquired skill of the battalion of workers, many of them previously just wielders of hammer and chisel, who eased valued shapes from their places and after many months, carefully eased them back into their former locations, so that they gave no indication of the far-reaching structural operations that had gone on during their absence, indeed gave no indication that they had ever been absent.



SOUVENIRS

ONE of the important duties of the Commission has been the disposition of articles and material removed from the White House and not required for re-use in the building. Following the specific provisions of law on this subject a comprehensive plan of operations was developed and approved by the President on February 17, 1950.

Subsequently a supplement to the plan was approved on October 1, 1950. It deals specifically and in detail with the distribution to the public of pieces of wood, stone and metal which had no tangible value but which were desired by many people for preservation as mementos or souvenirs of the historic building.

In accordance with the plan and supplement, articles of historic importance and value were allocated to museums and similar institutions for display to the public at large. Articles and materials of value

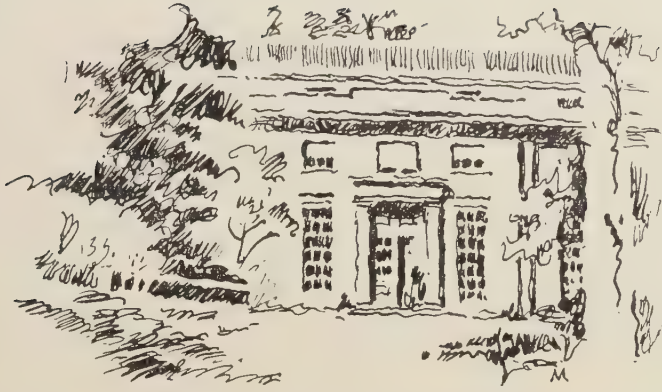
THE WHITE HOUSE

for practical purposes were transferred to governmental agencies for use in their regular work. The souvenir material was distributed to individual applicants at the estimated cost of distribution. Material of no use or value for any purpose was destroyed or disposed of otherwise in a manner which precluded its exploitation as a relic of the White House.

Movable property, such as furniture and furnishings, which are carried on the regular inventory of White House property, was not disposed of by the Commission. All such property has been left for use or disposition, when it is no longer usable or needed, by its legal custodian in accordance with law and regulations governing such matters.

As contemplated by the plan, the operations thereunder were entirely self supporting. Mainly because the demand for the small souvenirs exceeded the expectations, receipts exceeded the expenses by approximately \$10,000. The excess has been deposited in the Treasury.

A detailed report of the operations under the plan is included in the appendix to this report.



NEEDS OF THE PRESIDENT'S OFFICE

THE Commission, under the law, has been concerned primarily with the White House, itself, exclusive of the two wings and the connecting terraces. However, in the three years of its existence, the Commission has observed the functioning and needs of the White House operation, including the Office of the President; and believes that it is appropriate to point out here that the completion of the renovation of the White House leaves other related problems of importance untouched.

Until 1902, the executive offices were maintained on the second floor of the main structure and a half century ago they were removed to the then designated "Temporary" wing at the west side of the building.

In the past 50 years little has been done to provide executive space commensurate with the growth in importance and function of the President's office. The direct office facilities of the Chief Executive are not only insufficient but the whole arrangement of scattered offices and personnel is inconsistent with efficient and well coordinated management of the Executive Branch of the Government.

Space for important uses such as conference rooms, filing of confidential and important letters and documents, Cabinet meetings, Press

Conferences, and the like, is entirely inadequate.

A general estimate of office space required for the Chief Executive and functions directly or very closely related to him, indicates an area of approximately 120,000 sq. ft. to house approximately 350 persons. This does not include the Bureau of the Budget, the Council of Economic Advisors, the National Security Resources Board, the Office of Defense Mobilization, the Central Intelligence Agency, and some other agencies closely associated in their duties with the President's office. If such agencies as these were to be included, 1200 to 1300 people would be involved.

Obviously the problem is one of magnitude and importance. It appears almost equally obvious that a structure adequate to meet the needs could not be provided on the White House grounds without great detriment to the beauty of the building and its surroundings.

Beyond this, the space that might be evacuated if the office functions were removed from the grounds could very properly be integrated into direct use with the White House itself.

There is nothing in this situation that would suggest changes in the work recently completed in the renovation of the White House. This Commission considered carefully the possibilities of other plans, and found that the renovation as undertaken was a necessity without regard to any other requirements of the President's office.

This Commission, therefore, recommends that a comprehensive study of the problem of suitable space and location for the office of the President be made to develop specific detailed recommendations so that the Congress may have precise information of the action that is needed.

It is believed that the study could be made most effectively by a special body, with representation from the Legislative Branch as well as the Executive Branch, created for that particular purpose.

THE WHITE HOUSE WAS RECONSTRUCTED DURING
THE ADMINISTRATION OF

HARRY S. TRUMAN

PRESIDENT OF
THE UNITED STATES OF AMERICA

COMMISSION ON RENOVATION OF THE EXECUTIVE MANSION

SENATOR KENNETH MCKELLAR OF TENNESSEE
CHAIRMAN

DOUGLAS W. ORR OF CONNECTICUT
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HARBIN S. CHANDLER JR. ARCHITECT

JOHN McSHAIN
BUILDER

J. PAUL HAUCK
MANAGER

1948

1952

APPENDIX



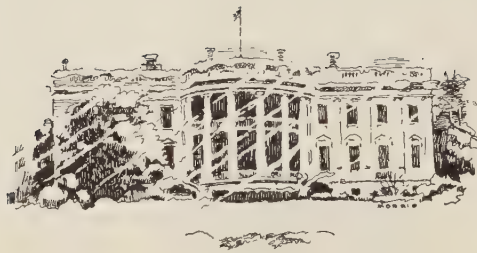


TABLE OF CONTENTS OF APPENDIX

	PAGE
I. Report to the President on Structural Survey of the Second Floor of the White House	90
II. Report of the Commissioner of Public Buildings	90
III. Chronology, by Douglas W. Orr	94
IV. "The White House Made Safe," by Richard E. Dougherty	97
V. Report of the Commission to the President and the Con- gress on Basic Plan of Construction Procedure	100
VI. Approximate Cost of Principal Categories of Work	101
VII. Contracts and Subcontracts	101
VIII. Miscellaneous Information	102
IX. Disposition of Surplus Materials	103
X. New Furniture and Furnishings	105
XI. Acknowledgments to Personnel	108

This appendix contains information of features of the work of the Commission on Renovation of the Executive Mansion, which, although not of sufficient general interest to warrant inclusion in the main body of the report, ought to be recorded and published so as to be readily accessible to those who may desire more detailed knowledge of this unusual project.

I

REPORT TO THE PRESIDENT ON STRUCTURAL SURVEY SECOND FLOOR, WHITE HOUSE

(February 25, 1948)

I. FINDINGS AS TO STRUCTURAL ASPECTS

- A. The second floor, generally, including the partitions, is of wood construction. The wood is in good condition but obviously very dry.
- B. The building has been remodeled from time to time by the installation of wiring and piping of various sizes by cutting sections or holes through supporting beams.
- C. From the information submitted to the Committee, and from our preliminary inspection, it is our opinion that the timber construction is inadequate.

II. FINDINGS AS TO FIRE HAZARDS

- A. The second floor, alone of all floors in the building, is of non-fire-resistant construction, the wood has thoroughly dried, and is a definite fire hazard.
- B. The building violates many of the principles of good fire engineering practice and presents a definite fire hazard to persons and property.

III. PREVIOUS FINDINGS

- A. McKim, Mead and White, Architects, who remodeled the White House in 1902, pointed out the hazards connected with the second floor construction.

- B. Delano and Aldrich, Architects, who were the consulting architects on the reconstruction of the third floor in 1927, strongly recommended the reconstruction of the second floor.
- C. It is obvious that these conditions have existed for a great number of years and should not be permitted to continue.

RECOMMENDATIONS

- A. The live load on the second floor should be restricted.
- B. Extreme diligence should be exercised as to fire alarm and protection.
- C. The situation should be carefully watched and further investigations conducted to determine the advisability of additional interim repairs.
- D. The second floor should be reconstructed of fire-resistant construction at the earliest practicable date, together with appropriate changes throughout the building to meet modern design standards.

Respectfully submitted.

R. E. DOUGHERTY,
President, American Society of Civil Engineers.
DOUGLAS WILLIAM ORR,
President, American Institute of Architects.
W. E. REYNOLDS,
Commissioner of Public Buildings.

II

REPORT OF THE COMMISSIONER OF PUBLIC BUILDINGS

(February 8, 1949)

REPORT OF THE SCOPE AND ESTIMATED COST OF THE WORK REQUIRED FOR ELIMINATION OF STRUCTURAL AND FIRE HAZARDS, EXECUTIVE MANSION

This report is based upon exhaustive technical studies and analyses, including field explorations and investigations, all of which are recorded fully in the attached "Study and Record of Survey for the Elimination of Structural and Fire Hazards, Executive Mansion."

1. PRESENT CONDITION

The fire hazards in the building derive from two principal sources; namely, the combustible type of construction of the second floor and the natural avenues for the spread of fire that the shafts of stairways provide.

Structurally, the building has deteriorated to an appalling degree. The degree and range of deterioration is such that by comparison the fire hazards are reduced to secondary importance. The structural deterioration, rather than being restricted to the old second floor, extends to interior walls and to the foundations of the outside walls.

The mechanical and electrical systems and equipment, to the limited extent that they are installed, are obsolete and inadequate.

The successive attempts at piecemeal improvement, both in structure and accommodations for living, have resulted in serious abuses to the integrity of the Mansion. A similar further approach may well be fruitless, would be a waste of funds, and would perpetuate basic weaknesses in the building.

2. PLANS FOR ELIMINATION OF HAZARDS AND FOR MODERNIZATION

The plans for the elimination of structural and fire hazards and for the modernization of the Executive Mansion propose:

- A. The underpinning of the foundations for the outer walls so that the building will rest upon a reliable stratum of sand and gravel at a level below the present wall footings.
- B. The removal of all interior walls. These walls have no spread foundations and rest upon inferior and compressible earthen materials.
- C. The construction of an independent interior structural steel frame to be supported by concrete piers that will be founded upon the stratum of sand and gravel upon which the underpinning of the exterior walls will bear.
- D. Delivery to the independent interior structural steel frame substantially all of the weight of the structure and its contents except, principally, the weight of the exterior walls.
- E. The construction of an entirely new basement under the entire building within the outer walls provided therefor by the underpinning of the exterior walls.
- F. The replacement of the second floor by a new floor of fire-resistant construction.
- G. The replacement, including modest relocations and additions, of interior partitions and facilities upon the first and second floors; the remodeling and rearrangement, as may be appropriate, of the space and facilities upon the ground floor; and the development of space provided in the new basement.
- H. The construction of underground vaults for the accommodation of machinery and equipment for which there will be no appropriate available space within the remodeled building or which for safety reasons is better accommodated elsewhere.
- I. The installation throughout the building of modern heating, plumbing, electrical light and power, and communications systems.
- J. The provision of complete air conditioning.
- K. The extension of the present elevator to the basement floor, the installation of a new service elevator to serve the lower floors, and a freight lift.

- L. The retention and perpetuation in the architectural development of the first and second floors of the basic proportions, space dispositions, finishes, details and motifs subject to such adjustments as shall be appropriate to accommodate modern materials and devices and to such minor corrections as shall prove proper to eliminate violations of the architectural orders.
- M. The elimination of fire hazards other than those otherwise removed by the reconstruction of the second floor.
- N. The exterior appearance of the building will not be changed.
- O. Installation of new floors upon the north and south porticos, granite steps leading to them, and replacement of concrete sidewalks in the formal garden by flagstones.

3. ESTIMATED COST

The estimated cost of the work required to execute the plans for the elimination of structural and fire hazards and for modernization of the Executive Mansion is \$5,412,000. No provision is made for the employment of overtime operating schedules.

4. SPECIFIC EXCEPTION

No consideration has been given to the alternative of demolishing the present structure and replacing it with a new and modern building.

5. SUBMISSION

This report submitted this the 7th day of February, 1949.

W. E. REYNOLDS,
Commissioner of Public Buildings.

STUDY AND RECORD FOR SURVEY FOR THE ELIMINATION OF STRUCTURAL AND FIRE HAZARDS EXECUTIVE MANSION

I. STATUTORY AUTHORIZATION AND REFERENCE

The "First Deficiency Appropriation Act, 1948" approved May 10, 1948, authorized the Federal Works Agency, Public Buildings Administration, to undertake and perform certain functions with respect of the Executive Mansion and appropriated \$50,000 for the purpose in the following language:

"Plans for elimination of structural and fire hazards, Executive Mansion: For preparation of plans for the elimination of structural and fire hazards in the Executive Mansion, including a survey of the structural condition of the building; the preparation of drawings and specifications for replacement of the existing wooden second-floor structures by a fire-resistant type of construction and for the installation of equipment, devices, and means for modernization of the building; and the making of a report to the Congress of the scope and estimated cost of work required to execute such plans; \$50,000, to remain available until expended."

2. PRINCIPAL PARTICIPANTS IN FORMULATION OF THIS REPORT

I. Officials of the United States:

- A. Designees by Authorizing Legislation:
Philip B. Fleming, Federal Works Administrator
W. E. Reynolds, Commissioner of Public Buildings
- B. Liaison with the President:
Lorenzo S. Winslow, Architect of the White House

II. Consultants:

Richard E. Dougherty
Past-President, American Society of Civil Engineers
New York, N. Y. (Nat'l. Hdqrs.)

Vice-President; Improvements and Development
(Ret. 1949) New York Central Railroad System,
230 Park Avenue, New York, N. Y.

Douglas William Orr
President, American Institute of Architects
Washington, D. C. (Nat'l. Hdqrs.)
Architect: (in private practice)
96 Grove St., New Haven, Conn.

Charles B. Spencer
President, Spencer, White & Prentiss
Foundation Engr's. & Contr's.
10 E. 40th St., New York, N. Y.

Edward F. Neild
Neild, Somdal & Neild, Architects
City Bank Bldg., Shreveport, La.

Edward L. Crosby
Mechanical Engineer; Member, Henry Adams, Inc.
Baltimore, Maryland

The services of these principal participants were augmented by staff architects, engineers and specialists of the Public Buildings Administration, of the National Bureau of Standards and of the Forest Products Laboratory.

3. INCEPTION OF THE PROJECT

The circumstances prior to the authorization of the project are quite fully set forth in the testimony before the Senate Subcommittee on Deficiency Appropriations in connection with the consideration of H. R. 6055 which was subsequently enacted as the "First Deficiency Appropriation Act, 1948." Reference is had to the hearings of that Subcommittee, pp. 234-238 incl., in which are recorded available relevant information as of February 1948.

4. NATURE AND SCOPE OF THE SURVEY

The basic and essential step to the formulation of any program for the rehabilitation of the Executive Mansion as for any structure, is the determination of the location, extent and character of the deterioration or damage that needs to be repaired. Accordingly, the survey of the condition of the Executive Mansion was begun by making explorations into the structure of the wooden second floor and its supporting walls at such points that seemed to be indicated by knowledge gained when the existence of unfavorable conditions first became known.

As explorations were made successively at places of suspected weakness or deterioration in the floors, walls and ceilings, the conditions revealed were progressively more alarming. The discovery of one element of weakness would cast suspicion upon another potential source of danger. The result was a progressive broadening of the fields necessary to be explored. The end-product of this pyramiding process was a complete survey of the condition of all principal elements of the structure. It included not only the second floor but also those portions of the structure that support the second floor and those portions above it that influence either that floor or its supporting structure. It included explorations to determine the adequacy of foundations and to establish the supporting values of materials underlying them. Its scope was extensive enough to provide information relevant to conditions that would be encountered in providing for the housing of such equipment, devices and means for modernization of the building as may be installed.

The survey did not extend beyond the confines of the original and central portions of the building. Specifically not encompassed by it were the newer portions generally referred to as the East Wing and the West Wing.

5. NARRATIVE DISCUSSION OF CONDITIONS OBSERVED

During the period immediately preceding the making of the survey and during the early days of its prosecution, primary emphasis was placed upon the fire hazard of the second floor and in the natural flues provided by shafts and stairwells extending vertically through the building. Of hardly less significance at that time was the lack of alternative emergency avenues of escape from upper floors.

As the survey proceeded successive revelations of elements of weakness and deterioration in the building structure served to divert the emphasis from the fire hazards to the structural hazard. The character and extent of structural weakness were found to be truly appalling. In a short time it became apparent that the removal of fire hazards would become largely a matter to be handled purely as one of the extensive design problems incidental to the structural rehabilitation.

Beginning with initial explorations into both suspect and random points of floors and walls of the second floor, the discovery of unfavorable conditions dictated the need for tracing these elements of weakness toward their sources. Indicative of the gravity of some of the conditions, reference may be had to the steps that

were taken to arrest the falling of the ceiling of the East Room, to the progressive and continuing failure of the brick wall that supports a main structural steel truss, and to the settlement of interior brick bearing walls which in turn has caused settlements in floors that they support.

The serious natures and the growing numbers of the elements of weakness being discovered, raised grave questions concerning the safety of the members of the presidential household if they remained domiciled in the structure. Accordingly, on November 8, 1948, the Federal Works Administrator recommended to the President that the household establish itself in other quarters. Promptly thereafter the building was evacuated and all furniture removed to places of safekeeping.

From time to time as the progress and needs of the survey required, Messrs. Crosby, Dougherty, Neild and Orr have examined the building and have given guidance and consultation. When the survey of the foundations revealed that the heavy interior bearing walls had settled badly and that, despite evidence of unequal settlement in them, the exterior walls might be founded upon an inferior clay stratum of questionable capacity to carry the loads to be imposed by the building, the decision was made to obtain the services of Mr. Spencer, a specialist in engineering problems of this sort.

On Friday, January 14, 1949, a conference of all of the participating officials and consultants, accompanied by members of their respective staffs, was held in the Executive Mansion. The consensus obtained at the conference provides the basis for the findings, conclusions and recommendations hereinafter recorded in this study.

6. UNDERLYING PRINCIPLE APPLICABLE TO ALL ASPECTS OF THE SURVEY

No work is proposed in scope or detail that will alter the architectural or cultural features or impair the integrity of the building in its role of a National Shrine. In all respects the historic and traditional symbolism of the Nation's most revered mansion must be preserved to the greatest degree consistent with the use of modern materials and equipment that will be incorporated into the project.

7. FINDINGS AND CONCLUSIONS; FIRE HAZARD AND STRUCTURAL FEATURES

The survey reveals the existence of conditions in the Executive Mansion that support the following findings and conclusions:

- A. The fire hazards in the building, while serious, are subordinate in importance to its structural inadequacies and deterioration, and can be readily corrected and eliminated incidental to operations involved in modernization and rehabilitation.
- B. The greater portion of the second floor construction, built about 1817 according to structural and safety standards of that time, is of wood construction without fire stops, and is the victim of many abuses over the years by cutting and otherwise. In consequence of these, it is a fire hazard and structurally inadequate.

CONCLUSION: The entire second floor is unsafe and should be removed. (The abuse which this floor has survived is eloquent confirmation of the generally recognized ability of timber to assimilate punishment.)

- C. The interior load-bearing masonry walls rest upon materials that are overstressed and inadequate for even present conditions. They are constructed of masonry which laboratory tests reveal to be, in some instances, already stressed to the crucial point. They have been extensively cut from time to time for the installation of ducts, pipes, and other alterations that have brought about unequal distribution of loading as evidenced by numerous cracks.

CONCLUSION: The interior load-bearing walls are so unsuitable and so grossly inadequate as to render their further use inadvisable.

- D. There are indications of movement in the exterior walls which are founded upon a stratum of clay that contains organic matter and that is revealed by tests to have a 2% to 5% compressibility under superimposed loads of usual working intensities.

CONCLUSION: The unsuitability and inadequacy of the exterior walls to support floor and roof loads require the provision of means to relieve those walls of all loads, present and future, other than those of their own weight.

- E. Borings reveal that there is a stratum of sand and gravel at a level approximately 15 feet below the present foundations of

the exterior walls, the supporting capacity of which is adequate to carry the weight of the structure if the load shall be delivered directly to it.

CONCLUSION: That stratum of sand and gravel offers the only accessible material capable of permanently and reliably supporting the structure.

- F. The exterior walls, apart from the inadequacy of their foundations, are unsuitable and inadequate to support, for an indefinite period of time, floor and roof loads that are or may be delivered directly to them.

CONCLUSION: The roof and all floors, together with all partitions thereon, should be carried upon a system of framing and supports which will be substantially independent of existing exterior walls.

8. FINDINGS AND CONCLUSIONS; MECHANICAL, ELECTRICAL AND COMMUNICATIONS FEATURES

The survey reveals the existence of conditions in the Executive Mansion that support specific findings from which definite conclusions derive as follows:

- A. The present plumbing system is largely makeshift by modern standards and is unsanitary.

CONCLUSION: It should be abandoned, except to such extent as a few of the bathroom fixtures may be found suitable for reinstallation in areas of subordinate importance.

- B. The present heating system is an inadequate, inefficient and loosely coordinated combination of three different types.

CONCLUSION: It is obsolete and should be completely abandoned.

- C. The present electrical system, including both light and power, is the result of improvised improvements, expansions and adaptations of an original installation in a structure that was designed and built before the advent of electricity.

CONCLUSION: The system is obsolete and inadequate and has neither the capacity nor the wiring arrangements which are essential to meet the needs of a modern building; it should be abandoned.

- D. The communications system is a makeshift by modern standards.

CONCLUSION: It is grossly inadequate and unsuitable for present and future demands; it should be abandoned.

- E. There is no permanently installed air conditioning in the building.

CONCLUSION: Due to the climatic conditions in Washington and the many purposes for which the White House is used, the installation of air conditioning and forced ventilation as complementary systems or in combination is indicated.

- F. The present elevator installation is in good condition but inadequate.

CONCLUSION: The present elevator should be reused but the need for additional facilities for providing vertical transportation is indicated.

- G. The kitchen and service equipment are to some degree of comparatively recent manufacture.

CONCLUSION: Such items as shall be found suitable in type and adequate in capacity for use in the rehabilitated structure should be retained and reinstalled therein.

- H. In general, conclude, that the extent to which the walls and floors in and upon which the present installations are made, are required to be demolished for the making of the structural rehabilitation of the building, the preservation of the existing mechanical, electrical and service facilities during the prosecution of the structural work will be impracticable.

9. RECOMMENDATIONS AS TO STRUCTURAL REHABILITATION

Recommendations as to measures to be taken to structurally rehabilitate the building are:

- A. Remove the present wooden second floor and replace it with a floor of concrete and steel having fire-resistive qualities.
- B. Remove all interior masonry walls below the third floor.
- C. Relieve the exterior walls of the burden of loads other than their own dead weight by the provision of a complete structural steel frame to be erected within the existing exterior walls of the building and deliver to this frame all of the load deriving from the second and third floors, the roof, and so much of the load from the present first floor as may be readily and appropriately delivered to it.

- D. Remove all interior partitions on the first, second and ground floors, and construct new partitions of modern types and materials.
- E. Provide a new foundation for the entire structure upon that stratum of sand and gravel determined to be suitable therefor at a level approximately 15 feet below the present foundations of the exterior walls by:
 - (1) Underpinning all exterior walls with continuous extensions thereof to the designated stratum.
 - (2) Found all foundations to be provided for interior columns or bearing walls upon the designated stratum.
- F. Concurrently with and incidental to the underpinning of exterior walls and the construction of interior foundations, excavate for and build within the then new outside foundation walls a new basement under the entire building.

Related to the structural rehabilitation but more intimately associated with improvements in the equipment proposed to be installed to serve the building, is the recommendation:

- G. Construct underground and outside of the foundations of the building, one or two vaults, as further analyses indicate to be desirable, to house electrical gear and machinery of various sorts.

10. RECOMMENDATIONS AS TO MECHANICAL, ELECTRICAL AND COMMUNICATIONS INSTALLATIONS

Recommendations as to measures to be taken to provide mechanical, electrical and communications facilities in the building as it will be structurally rehabilitated are:

- A. Provide a completely new plumbing system throughout the building, including new piping and new fixtures, except that presently installed fixtures of modern types that are found to be in good condition be reinstalled in areas of lesser importance.
- B. Provide a completely new installation for heating, ventilating and air conditioning the entire building by a split system which will meet the different demands of those floors that are primarily used for private purposes and of those other floors that are more generally used for public and quasipublic purposes.
- C. Provide a completely new electrical system throughout the building and incorporate into it flexibility of power sources, continuity of electrical supply and adequacy of outlets so as to meet demands for present and potential uses of electricity.
- D. Provide a complete system for communications within and between various parts of the building and interconnected with other systems, military and civilian, both public and private, including systems of exterior communication by wire or otherwise.
- E. Reinstall the present elevator so as to serve the basement and all floors; provide a new service elevator that will initially operate between the basement and the first floor but provide for future extension to the third floor in the present planning; provide a freight lift which will operate from the basement to the ground floor.
- F. Provide underground vaults for the accommodation of machinery, transformers, switch gear and other related devices that are best placed in isolated locations.
- G. Provide a new kitchen on the ground floor, equipped and arranged to meet the demands for food preparation and service, reusing present equipment so far as practicable.

11. ARCHITECTURAL ASPECTS OF THE REHABILITATION AND MODERNIZATION

For some period of time during which the structural rehabilitation of the building is in progress, conditions within the building will present to the layman the appearance of utter confusion and disorder. The first floor will either be demolished or be supported upon shoring in the new basement area in which there will be in progress the operations of underpinning the outer foundation walls, of constructing foundations for interior columns, and of constructing the new basement. The third floor will be supported upon shoring while the second floor is being removed. At the same time the outer walls must be braced to prevent their collapse following the removal of the second floor and during the erection of the new interior structural frame. So far as the building structure is concerned there will be a considerable interval during which the four exterior walls will serve as little more than an enclosure surrounding the present third and first floors

which will be supported inside but independent of them by the system of shoring and bracing.

Upon the third floor existing partitions and facilities will need to be disturbed only to the extent necessary to change and reinforce the supports of that floor from the walls to the new structural steel frame. From the first floor, a portion of the structural slab, all partitions and facilities must be demolished and, probably, flooring surfaces removed down to the structural slab in order to preserve them for reinstallation to the extent found practicable as the work progresses. The present ground and second floors will be entirely cleared of all partitions and facilities.

The architectural rehabilitation below the third floor will, to all intents and purposes, start from the naked exterior walls with their present door and window openings. The first floor will consist of a bare structural slab; the second and ground floors will be entirely replaced; and the basement will be entirely new. It follows then that there will be considerable latitude and freedom in the development of the interior areas so as to find space for such needed facilities as modernization dictates.

In the architectural aspects of the work, the basic concepts applicable are:

- A. The appearance of the exterior of the building will be unchanged in any manner that will impair its architectural integrity.
- B. The principal rooms, including halls and corridors of the first floor comprising those which are regularly and traditionally used for affairs of state, after restoration, will be faithful architectural reproductions of the original rooms as to finishes, details and arrangement. Due consideration will be given, however, to the elimination of present minor features the natures or designs of which are inconsistent with the periodicity or general motifs of the rooms in which they appear.
- C. The rooms upon the first floor other than those comprising the principal rooms, will be restored in such manners and provided with such facilities as will be appropriate to the purposes for which they are intended.
- D. The grand staircase from the first to second floor will be redesigned and rebuilt; and present lobby columns be replaced by other columns at other locations.
- E. The general arrangement of rooms, including halls and corridors, on the second floor, after restoration, will conform in principal aspects to that presently existing. Within the limits so imposed subordinate arrangements may be employed in order to introduce the essentials and conveniences that contribute to the needs and amenities of modern living.
- F. The finishes throughout the second floor after restoration will be consistent with the dignity and respect which the presidential household commands.
- G. The ground floor will be generally restored with minor alterations, and will accommodate, in addition to a thoroughly modern kitchen and auxiliary rooms, other facilities complementary to those provided elsewhere in the building.
- H. The new basement will be developed primarily to accommodate domestic services, vaults, stores, machinery and equipment and toilets and retiring rooms.
- I. The vault or vaults that will be constructed below the ground and outside the confines of the building for the accommodation of electrical equipment and machinery that are not properly housed within the building, are to be purely utilitarian and unembellished concrete structures.

Architecturally and artistically the interior of the mansion will be dignified and impressive upon the materialization of the foregoing concepts. The traditional periodicity and style of its orders of design will be perpetuated.

Attention must be directed to a somewhat incongruous situation that would prevail unless a moderate amount of work is performed outside of the building. This includes:

- I. The complete repainting of the exterior.
- II. South Portico; install a new floor, replace present steps from the lawn with granite steps, and replace concrete garden walks contiguous to the building with flagstones.
- III. North Portico; install a new floor, replace present steps with granite steps, and install a granite wall coping.

12. EXPECTED RESULTS OF PROPOSED PROGRAM

Upon completion of the program of restoration, structural rehabilitation and modernization outlined in the preceding items of this study, the structural condition of the mansion and its principal

and fixed architectural finishes will be expected to survive the ravages of time for generations to come. The only recognizable possible source of future weakness will be the outside walls that are being retained and are of a type of construction employed in days long gone. These walls, however, have survived for nearly 150 years and will be materially strengthened by the addition of the interior steel frame. By all modern standards, the renovated building will be permanent.

Cognizance must be accorded the fact that progress in the development and manufacture of industrial products is continuous. Obsolescence of equipment and devices is inherent in the passing of time. Pipes corrode and break, wiring systems deteriorate, and new uses put unanticipated demands upon old service mains. In the renovated building, provisions will be made so that replacements and repairs may hereafter be made with the least possible inconvenience and at the minimum cost.

13. ANTICIPATED COST

The rehabilitation and modernization of the Executive Mansion as proposed and outlined in the earlier portions of this study involves not one but many of the most difficult and costly operations which the building industry is equipped to undertake. The work will command the services of top engineering and managerial personnel of long experience and sound judgment.

Working areas will be restricted. The use of power equipment and labor-saving devices will be limited by the nature of the work and by the spaces available for them. As compared to highly mechanized operations that are habitually associated in present day thinking of building construction, the employment of hand labor

methods will be expected to predominate. Many of the skilled mechanics, in fact many of the unskilled craftsmen supporting them, will necessarily be men of broad and specialized experience. The percentage of the total cost of the work that will flow to payrolls upon the job will approach twice the amount which usually goes to payrolls upon new construction projects of comparable cost.

The estimated cost of eliminating the structural and fire hazards in the Executive Mansion together with the installation of equipment, devices and means of modernization of the building is \$5,412,000. This figure makes no provision for the employment of overtime operating schedules.

14. SPECIFIC EXCEPTION

No consideration has been given to the alternative of demolishing the present structure and replacing it with a new and modern building. Such a program would be entirely feasible as a construction operation. It would be less expensive than the project for renovation, rehabilitation and modernization hereinbefore delineated. Aside from the specific directive in pursuance of which this study has been made, consideration of the alternative would have trespassed upon the domains of national pride, sentiment and tradition. The Executive Mansion is and will probably long be "The White House"—a symbol of the Nation.

15. SUBMISSION

This study submitted this 7th day of February, 1949.

W. E. REYNOLDS,
Commissioner of Public Buildings.

III CHRONOLOGY

Douglas W. Orr
Vice Chairman of the Commission
Past President of American Institute of Architects

1949			1950	
June 3	The President met with members of the Commission.		Mar. 23	Dismantling completed.
June 15	The Commission organized.			Demolition 50 percent completed.
	Between June 15 and September 30, the Commission held 8 meetings chiefly devoted to organizational, administrative, and procedural matters, engineering investigations, extensive studies of plans and estimates of the several practicable courses in respect to the construction of a new building or the renovation of the existing structure, and tentative plans for the care and disposal of surplus articles and materials.			Shoring 30 percent completed.
Sept. 30	List of general contractors for bidding approved, 15 in number.			76 underpinning pits completed and dry packed; 12 more under way.
Oct. 11	Bidding documents approved.		Apr. 1	The work ahead of schedule.
Nov. 3	General contract award approved to lowest bidder, John McShain, Inc., Philadelphia.			8 permanent column footings in place.
	Commissioner of Public Buildings authorized to enter into contract.			87 underpinning pits completed.
Nov. 29	Approved award of underpinning subcontract to Spencer, White & Prentiss, Inc., New York.		Apr. 18	Demolition 55 percent completed.
	Appointed Messrs. Orr and Dougherty as Technical Subcommittee for Commission.			Shoring 55 percent completed.
Dec. 12	General disposition of surplus material determined.			Underpinning 90 percent completed.
Dec. 13	Underpinning work started.			Project reported 42 days ahead of schedule.
	Work of dismantling started.		May 8	Excavation of basement 10 percent completed.
1950				Underpinning 95 percent completed.
Jan. 6	Part I of the Specifications approved.			25 tons of permanent structural steel in place.
	Interim plan for disposition of surplus material approved.		May 24	Demolition 85 percent completed.
Jan. 30	Award of subcontract for furnishing structural steel to Bethlehem Steel Company approved.			Shoring 80 percent completed.
	3 underpinning pits completed with jacking pockets.			Excavation 40 percent completed.
Feb. 17	Shoring well under way.			Award of subcontract for erection of structural steel approved.
	Dismantling completed except for some exterior sash.		June 20	Demolition 96 percent completed.
	Demolition well under way.			Underpinning 98 percent completed.
	23 underpinning pits completed and dry packed.		June 25	Start of Korean War.
	Excavation for permanent footings started.		June 29	Structural steel, 40 tons erected in place.
Mar. 6	Dismantling 95 percent completed.			Project 35 days ahead of schedule.
	Demolition 40 percent completed.		July 19	Structural steel, 150 tons erected in place.
	Shoring 20 percent completed.			Project 25 percent completed.
	41 underpinning pits completed and dry packed, and 22 more under way.		Aug. 16	Part II of Specifications approved.
Mar. 8	Subcontract for furnishing structural steel awarded to Bethlehem Steel Company.			Experiencing difficulty in obtaining competitive bids and suitable labor.
				Possible delay in completion indicated.
				Excavation of basement completed.
				Footings completed.
				50 percent of structural steel in place.
				Approved award of subcontract for mechanical work.
				Referred bids on electrical work back for reconsideration because of excessive amounts.
			Aug. 30	Shoring 96 percent completed.
				Columns supporting trusses T2N and T2S and east ends of trusses T4 and T5 jacked into place and truss loads transferred to columns.
				Reinforcing of trusses completed.

1950	<p>Aug. 30 Removing steel to raise corners of roof. Project reported on schedule, but awards of subcontracts falling behind schedule. Subcontract for electric work rereviewed—changes considered. Awards of subcontracts for elevators and dumbwaiters, laundry and kitchen equipment, and incinerator approved. Drawing delays.</p> <p>Sept. 14 Due to delays, progress schedule revised and general contractor's completion date set as December 1, 1951 instead of September 26, 1951. Approved award of electric subcontract after revisions—cost above budget. Levels reported by Coast and Geodetic Survey indicate building movement of 0.6 of a millimeter since the last measurement. Part III specifications approved.</p> <p>Sept. 29 Structural steel 70 percent completed. Concrete fireproofing started. Approved award of subcontract for interior furnishing. Part IV specifications approved.</p> <p>Oct. 23 Structural steel 90 percent completed. Concrete 15 percent completed. Difficulty in procurement of supplies and equipment Slow processing of N. P. A. requirements.</p> <p>Nov. 16 Steel 98 percent completed. Concrete 40 percent completed. Priority situation adding to difficulties and delays. Not possible to get blanket priority. Bidding definitely affected by lack of advance priorities. Additional work in East Wing—further delay. Considered overtime to make up delays.</p> <p>Nov. 22 Technical Committee meeting to reduce mounting costs—cut back.</p> <p>Nov. 29 Steel completed. Concrete 60 percent completed. Attempt to speed up the delayed drawing situation. Contractor advises delay in completion of project due to conditions caused by Korean situation.</p> <p>Dec. 12 Concrete 75 percent completed. Mechanical 6 percent completed. Electrical 4 percent completed. Approved award of subcontract for lathing and plastering. Approved award of subcontract for finished wood flooring. Work started on interior partitions. Revised control estimate considered following cut backs.</p>	1951	<p>Apr. 9 Elevators 30 percent completed. Delays noted in delivery of transformer and switch gear equipment. Authorized award of subcontract for asphalt and rubber tile work. Considered budget on approach work.</p> <p>Apr. 26 Report on delivery dates for transformers and switch gear. Decision to paint the State Dining Room. Detailed estimates submitted for second floor furnishings. Authorized award of subcontract for hollow metal work.</p> <p>May 11 Plastering delay noted. Consideration of special lighting fixtures and reuse of old. Consideration of record drawings.</p> <p>May 22 Review of subcontract estimates. Review of interior designs.</p> <p>June 4 Lack of models delays plastering. Authorized award of interior painting subcontract. Reviewed estimates for interior special lighting fixtures. Reviewed plans for grounds restoration work.</p> <p>June 19 Determined that original appropriation insufficient to complete work under circumstances. Principally attributable to effects of Korean War. Further consideration of interior designs. Further consideration of special lighting fixtures and costs. Award of exterior painting subcontract.</p> <p>June 29 Concrete 97 percent completed. Brick and tile 97 percent completed. Lathing and plastering 80 percent completed. Interior marble 21 percent completed. Strike ended June 28, 1951. Exterior stone 20 percent completed. Hollow metal 25 percent completed. Carpentry (rough) 90 percent completed. Cabinet work 35 percent completed. Plumbing 65 percent completed. Heating 65 percent completed. Air conditioning 65 percent completed. Electrical 65 percent completed. Elevators 65 percent completed. Reviewed broadcasting, window glass, special lighting fixtures and certain interior work.</p> <p>July 17 Detailed discussion of interiors and furnishings. Interior cabinet work under way.</p> <p>Aug. 3 Interior painting about to start. Strike at plant furnishing hollow metal seriously delaying work. Concern expressed as to subcontracts delivering and completing: Finished wood flooring. Marble work. Finished hardware. Special lighting fixtures. Plasterers strike starts. Fine Arts Commission visited the building on July 19 and examined display of architectural drawings which met with unanimous approval. Rereviewed interior furnishings budget. Decided to carpet Main Stair. Plaster casting time and costs reviewed in detail. Accepted certain donations of furnishings given the White House. Review of general budget showed need of added funds for completion. Review of acoustical treatment of Restored Kitchen for broadcasting.</p> <p>Aug. 17 Plastering strike continues. Back plastering for tile delays that installation. Replaced orders for hollow metal due to plant strike. Request for supplementary funds reduced by Congress to \$100,000—insufficient. Amount now available is \$5,500,000. Fine Arts Commission met with Commission on Renovation to review colored sketches and material exhibit for interior decoration. Fine Arts Commission approved in letter from Chairman dated August 20, 1951. Technical Committee reviewed numerous items, including broadcasting, lighting, acoustics, modification in wood flooring, etc.</p>
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- 1951
Sept. 6 Lack of additional funds requested is delaying ordering of materials and letting subcontracts. Work on underground mechanical areas completed. Cabinet work 50 percent completed. Plastering strike settled August 18. Plastering continuing. Cumulative delays indicate completion date beyond January 15, 1952. Sleepers and subflooring (wood) partially delivered. This work progressing very slowly. Discussion of exterior approach work. Agreed to leave leveling pins of Coast and Geodetic Survey in place and take another series of levels after full loading of structure. Readings indicate maximum movement of building over 6-month period of one and one-tenth millimeters. Rereviewed interior furnishings budget.
- Sept. 21 Lathing and plastering 98 percent completed. Interior marble 65 percent completed. Exterior stone 45 percent completed. Second floor cabinet work being installed. Plumbing, heating, and air conditioning 80 percent completed. Electric system 96 percent completed. Lack of certain marble delaying Main Lobby. Much concern about delays in installation of wood flooring and structural glass. Tentative selection of interior colors approved.
- Oct. 1 Exterior painting commenced. Detailed review of special lighting fixtures and interior marble situation.
- Oct. 19 Rejection of certain wood flooring. Discussion of road work. Review of work remaining to be done. Formal statement as to procedure for visitors to buildings and grounds. Technical items reviewed in detail.
- Nov. 2 Completion schedules reviewed for all remaining work indicate an even later date for occupancy. Total funds now available—\$5,761,000. Construction control estimates revised accordingly. Bureau of Public Roads developed plans and specifications for approach road work. Subflooring third floor ready for laying of finished flooring.
- Nov. 19 Very unsatisfactory progress on installation of wood flooring. 11 rooms on second floor ready for finished flooring. Progress on structural glass installation unsatisfactory. Discussion of final report. Condition of portraits of Presidents and Wives discussed.
- Dec. 6 Report by Dr. Finley on condition of paintings in custody of National Gallery of Art. All wood subflooring on site. Wood flooring installation still unsatisfactory.
- Dec. 20 Date of March 1, 1952, for completion of construction work held dependent on subcontract performance. Scarcity of pipe coverers. Shortage of skilled floor layers. Exterior painting nearing completion. Revision of certain lighting fixture schedules ordered.
- 1952
Jan. 8 More floor layers required to complete work by February 15. Public Buildings Service New York office assigned engineer to expedite shipments of bath fixtures. Report on special lighting fixtures reviewed. Technical details reviewed. Representatives of National Capital Parks discussed approach work. Reviewed list of furnishings not previously provided for.
- Jan. 25 Wood flooring on second floor nearing completion. Third floor completed and sanding started. Subfloors laid in principal rooms of first floor. Flooring still behind schedule. Exterior stone work completed on north side. Interior marble work essentially completed except bases in rooms with wood floors. Millwork installation falling behind. Painting, except baths, completed on third floor.
- 1952
Jan. 25 Temporary buildings allocated to National Park Service. Detailed review of technical items. The Commission conferred with the President, who urged that every effort be made to have the building ready for occupancy not later than April 1.
- Feb. 5 Completion date hinges on flooring and interior millwork. Completion date indicated now as March 29. Detailed review of situation and actions to be taken to conclude the work.
- Feb. 18 Resolution adopted on decease of Honorable Frank B. Keefe, original member of Commission. Review of completion schedule. Review of financial status. Review of technical items.
- Feb. 26 Painting second floor completed. Fire destroyed electrical shop on February 19. No material loss. Furniture moving scheduled. Detailed review of final lighting fixture schedule.
- Mar. 5 Reviewed revised completion schedule. Conference on security items. Review of technical details.
- Mar. 14 Arrangements for inspection tour by Members of Congress. Inventory of furniture. Keys for second and third floors to be turned over to White House, Monday, March 17. Contract for television equipment approved.
- Mar. 23 Inspection of White House by Members of Congress, Cabinet and Supreme Court.
- Mar. 24 Progress report indicating completion March 26 for all residential areas. Review of financial status. Correction of certain defects discussed for immediate remedy.
- Mar. 27 Letter to the President advising building, essentially complete and considered ready for occupancy, is being turned over to operating staff as of this date. Final inspection of building by Commission and Executive Director. Final report on leveling shows motion of only nine tenths of a millimeter since last reading. Status of construction, furnishing, and finances again reviewed. President and family return to White House.
- Apr. 9 Review of clean-up items and corrections. Review of finances. Review of furnishings. Review of disposition of surplus materials. Presentation of list of gifts and loans.
- May 1 Disposition of remaining surplus materials decided upon. Inventory of furnishings. Acknowledgment of appreciation for work of National Park Service. Remaining problems discussed. Final report discussed.
- May 20 Final report discussed. Financial status discussed. Technical items reviewed. Subcontractor's claim reviewed. Approved letters of appreciation to donors. Approved cancellation of fire insurance carried during reconstruction.
- June 2 Discussion of final report—size—content—photographs. Review of financial status. Final report on souvenir program. Review of pending technical items.
- June 13 Discussion of final report. Disposition of Commission's records decided. Termination of staff. Official termination of Commission discussed. Status of accounts of subcontractors reviewed. Claims reviewed.
- June 28 Discussion of claims of subcontractors. Discussion of financial status. Mr. Smice commended on eve of his retirement from Government service. Recognition of personnel contributing to renovation work. Details of final report discussed.

THE WHITE HOUSE MADE SAFE

Richard E. Dougherty
Member of the Commission
Past President of the American Society of Civil Engineers
(from an article in CIVIL ENGINEERING)

The renovation of the Executive Mansion, popularly known as the "White House," has probably aroused greater interest throughout the country than any other construction project in recent years, especially with the President again in residence as of March 27, 1952. Under date of February 3, 1948, and as the newly inducted President of the American Society of Civil Engineers, I received a most startling letter, the essential portion of which read as follows:

"It will be appreciated if you could find it possible to come to the White House at 10:00 a. m., February 25, 1948, for a meeting with Mr. Howell Crim, Chief Usher of the White House, and Mr. Lorenzo Winslow, Architect of the White House. We are also inviting Mr. Douglas W. Orr, President of the American Institute of Architects, and Mr. W. E. Reynolds, Commissioner of Public Buildings, Washington, D. C. The purpose of this meeting is to make a structural survey of the safety of the White House."

The letter was signed by Matthew J. Connelly, Secretary to the President. In company with Mr. Orr, I attended the meeting at the White House on February 25, 1948. We were met by Messrs. Crim, Reynolds and Winslow.

The President and others entrusted with the responsibility for the building had become alarmed at the increased effects of vibration in the second floor, manifested by the tinkling of the huge crystal chandeliers, the ominous creaking of timbers and other indications of possible structural defects. We carefully reviewed the few available plans of the building and made as complete an inspection as was possible with the essential structural portions of the building shrouded in plaster and building finish. It was perfectly obvious that the building, particularly the second floor where the family lived, was a fire trap, becoming structurally unsafe, and could not meet the requirements of any fire or building ordinances worthy of the name.

A report, then confidential, was immediately made to the President and signed by Messrs. Reynolds, Orr and myself, to the following effect:

I. FINDINGS AS TO STRUCTURAL ASPECTS

- A. The second floor, generally, including the partitions, is of wood construction. The wood is in good condition, but obviously very dry.
- B. The building has been remodeled from time to time by the installation of wiring and piping of various sizes by cutting sections or holes through supporting beams.
- C. From the information submitted to the Committee, and from our preliminary inspection, it is our opinion that the timber construction is inadequate.

II. FINDINGS AS TO FIRE HAZARDS

- A. The second floor, alone of all floors in the building, is of non-fire resistant construction, the wood has thoroughly dried, and is a definite fire hazard.
- B. The building violates many of the principles of good fire engineering practice and presents a definite fire hazard to persons and property.

III. PREVIOUS FINDINGS

- A. McKim, Mead and White, Architects, who remodeled the White House in 1902, pointed out the hazards connected with the second floor construction.
- B. Delano and Aldrich, Architects, who were the consulting architects on the reconstruction of the third floor in 1927, strongly recommended the reconstruction of the second floor.
- C. It is obvious that these conditions have existed for a great number of years and should not be permitted to continue.

RECOMMENDATIONS

- A. The live load on the second floor should be restricted.
- B. Extreme diligence should be exercised as to fire alarm and protection.
- C. The situation should be carefully watched and further investigations conducted to determine the advisability of additional interim repairs.

- D. The second floor should be reconstructed of fire-resistant construction at the earliest practicable date, together with appropriate changes throughout the building, to meet modern design standards.

Even then, and until a sufficient amount of plaster and building finish had been removed to permit adequate inspection, no one realized the extent of deterioration subsequently revealed. The only safe place on the second floor seemed to be the much discussed and maligned balcony. There were no proper fire exits for either the second or third floors. I inquired as to how, in the event of fire or other emergency, they had expected to get a crippled President out. The response was that a canvas chute had been constructed outside of his bedroom window on which he would be placed, in the event of trouble, by one of his husky bodyguards—then he would slide to the lawn where an automobile stood ready for service night and day during the war period. While undoubtedly not so conceived, nevertheless, the balcony did serve as sort of a pseudo-fire escape and would have given the President and his family a chance to get out of their rooms without having to jump from a window or be thrown into a chute.

Mr. Orr and I were requested to come to Washington again on September 8, 1948. We again met with Messrs. Crim, Reynolds and Winslow together with C. W. Barber and C. K. Yingling, Jr., M. ASCE, structural engineers of the Public Building Service; Col. Douglas H. Gillette, Corps of Engineers; and Dr. Douglas E. Parsons, M. ASCE, Chief, Building Technology Division, National Bureau of Standards. Dr. Parsons reported then and subsequently as to various tests on the masonry. Among other things, we found that, in order to play safe and counteract some of the vibration, two 1-in. rods had been placed to suspend that part of the second floor carrying the President's office from the steel of the third floor and directly above the Blue Room with its heavy chandelier. Small rods had been placed at several other locations, suspending parts of the second floor from the third floor.

Two of the carrying timbers on the second floor were found to have been badly split longitudinally and had been reinforced by clamps. A brick pilaster, extending from the foundations and supporting one end of an important steel truss carrying a substantial part of the third floor, was found to be cracked and slowly but definitely showing signs of failure. Late in January 1950, as demolition progressed, this pilaster was found to have been cut for large ventilating and heating flues on the second floor level. Both timbers and masonry in various essential structural locations had been indiscriminately cut to provide for heating and ventilating flues, plumbing, water lines and other piping and electrical conduits. It is a wonderful thing to contemplate the abuses that materials of construction sometimes will undergo before failure. The interior walls, on inadequate foundations, primarily built of brick masonry laid with lime mortar, were seriously cracked in places by settlement. The exterior walls were generally about 4 ft. thick with the outer course of Virginia sandstone and with a backing of stone or brick.

Mr. Orr and I concluded with Commissioner Reynolds that a major operation would be required and not merely a reconstruction of the second floor. In October 1948, when evidence was found of movement of plaster in the East Room, a detailed inspection revealed that a large section of the heavy ornamental plaster forming the ceiling of the East Room had dropped about 6 in. from the supporting timbers above. It was fortunate indeed that a large block of plaster had not fallen in the East Room on the occasion of some formal reception. The large and enormously heavy crystal chandeliers, three in the East Room and one in the Blue Room, constituted definite hazards. The President moved to Blair House in November 1948.

A History of the Building

The White House was originally projected and the cornerstone laid in 1792 with an elaborate ceremony conducted by the Freemasons of Georgetown. There was apparently a celebration after the ceremony at Mr. Sutter's Fountain Inn in Georgetown, where

an elegant dinner was provided with sixteen different toasts. After the restoration of 1817, the walls were painted white, probably to offset discoloration and variation in the texture of the sandstone. Originally known as "The President's House" until the time of Abraham Lincoln, it was then officially called the "Executive Mansion" and so continued until Theodore Roosevelt issued an Executive Order establishing the name of the "White House."

The building was designed by James Hoban, an Irish architect, who won a competition which included Thomas Jefferson as an anonymous participant. Mr. Jefferson came out second. Hoban's conception supposedly followed the exterior of the Palace of the Duke of Leinster in Dublin, Ireland, now called Leinster House, and presently serves as the meeting place of both Houses of the Irish Parliament. The building was completed at a reported cost of \$400,000, and was placed in service during the Administration of John Adams in 1800. After Thomas Jefferson became President in 1807 and assisted by Benjamin F. Latrobe, a most prominent architect of that day, he developed the designs of the North and South Porticoes and the East and West Terraces. The South Portico was added in 1824 under James Monroe and the North Portico in 1829 under Andrew Jackson. The building was burned by the British in 1814 and restored in 1817. The original timber construction was replaced, supported on the existing exterior walls. Other men in those days, faced with the decision as to whether or not to tear the building down and start anew, had decided against such procedure. Modern conveniences, then decidedly limited, were introduced from time to time without much regard for the cutting of timber and masonry.

The office functions of the White House are located in separate wings which are actually independent structures although connected with the main building. The President's office, the Cabinet Room and other general offices are located in the West Wing constructed in 1902. This Wing, originally constructed under Theodore Roosevelt, was completely rebuilt in 1910 and the attic space converted to office space in 1927. The wing was substantially damaged by fire in 1929 and restored in 1930 and largely rebuilt in 1934. The East Wing, providing additional office space, small assembly and conference rooms, was constructed in 1942 under Franklin D. Roosevelt. These wings are of modern construction and there is no problem in that connection except that the office space available to the President on the White House grounds is neither adequate nor convenient for the purpose.

Since 1817, there have been two major alterations. The first was in 1902, during the administration of Theodore Roosevelt, when the first floor was rebuilt in an effort to restore something of the original architecture, and at the same time to introduce certain modern features and, among other things, to remove the office functions from the main building to the new West Wing. Changes were made in the ceremonial East Room, the State and Family Dining Rooms and, to a more limited extent, in the Blue, Green and Red Rooms, all of which, with the large hall and lobby, form the first floor. The second floor was left in its original structural condition with its timber framing, although the President's living quarters were somewhat modernized.

In 1927, during the administration of Calvin Coolidge, it was decided to improve the third floor construction and the roof structure was changed from timber to steel with a fire-resistant third floor, its weight being suspended from the roof trusses. The second floor was left unchanged. Thus, after 1927, the White House consisted of a first and third floor of fire-resistant construction and a second floor of timber dating back to the reconstruction after the fire of 1814. The reconstructions of 1902 and 1927 obviously changed the distribution of stress throughout the building. The recommendations of the engineers and architects of those days that the second floor be reconstructed and made fireproof were disregarded because of arbitrary executive limitations as to time and expense.

An initial appropriation of \$50,000 for planning was authorized by Congress in 1948. Commissioner Reynolds, in conjunction with the White House Architect, L. S. Winslow, AIA, diligently proceeded to develop plans for reconstruction. At the request of the President, Mr. Orr and I collaborated with the Federal Works Administrator, Maj. Gen. Philip B. Fleming, M. ASCE, and Commissioner Reynolds, M. ASCE, in the presentation to Congress. Mr. Charles B. Spencer, President of Spencer, White & Prentis, all members of ASCE, who had been called into consultation, also appeared before the Appropriations Committee of the Senate. The 81st Congress, under Public Law 119, authorized an appropriation of \$5,400,000 predicated upon the following:

"A. The underpinning of the foundations for the outer walls

so that the building will rest upon a reliable stratum of sand and gravel at a level below the present wall footings.

"B. The removal of all interior walls. These walls have no spread foundations and rest upon inferior and compressible earthen materials.

"C. The construction of an independent interior structural steel frame to be supported by concrete piers that will be founded on the stratum of sand and gravel upon which the underpinning of the exterior walls will bear.

"D. Delivery to the independent interior structural steel frame substantially all of the weight of the structure and its contents except, principally, the weight of the exterior walls.

"E. The construction of an entirely new basement under the entire building within the outer walls provided therefor by the underpinning of the exterior walls.

"F. The replacement of the second floor by a new floor of fire-resistant construction.

"G. The replacement, including modest relocations and additions, of interior partitions and facilities upon the first and second floors; the remodeling and rearrangement, as may be appropriate, of the space and facilities upon the ground floor; and the development of space provided in the new basement.

"H. The construction of underground vaults for the accommodation of machinery and equipment for which there will be no appropriate available space within the remodeled building or which, for safety reasons, is better accommodated elsewhere.

"I. The installation throughout the building of modern heating, plumbing, electrical light and power and communications systems.

"J. The provision of complete air conditioning.

"K. The extension of the present elevator to the basement floor, the installation of a new service elevator to serve the lower floors, and a freight lift.

"L. The retention and perpetuation in the architectural development of the first and second floors of the basic proportions, space dispositions, finishes, details and motifs subject to such adjustment as shall be appropriate to accommodate modern materials and devices and to such minor corrections as shall prove proper to eliminate violations of the architectural orders.

"M. The elimination of fire hazards other than those otherwise removed by the reconstruction of the second floor.

"N. The exterior appearance of the building will not be changed.

"O. Installation of new floors upon the North and South Porticoes, granite steps leading to them, and replacement of concrete sidewalks in the formal garden by flagstones."

Commission Appointed

As recommended by the President, Public Law 40 of the 81st Congress authorized the work to be under the jurisdiction of a Commission to consist of:

- (1) Two Senators appointed by the President of the Senate
- (2) Two Representatives appointed by the Speaker of the House of Representatives
- (3) Two persons appointed by the President of the United States from the executive branch or from private life.

Vice-President Barkley for the Senate designated Senators Kenneth McKellar of Tennessee and Edward Martin of Pennsylvania. Speaker Rayburn for the House of Representatives designated Congressmen Louis C. Rabaut of Michigan and Frank B. Keefe of Wisconsin. The two representatives of the President were Mr. Orr and myself. Mr. Orr and I were designated by the Commission as a Technical Committee to study and screen technical and contractual questions covering everything from the foundations to the building finish and interior decoration, and to take any necessary action between meetings. The Commission was organized in June 1949 with Senator McKellar as chairman and Mr. Orr as vice-chairman. Mr. Keefe retired from Congress at the end of 1950 because of a heart condition and died in February 1952. He was succeeded by Congressman J. Harry McGregor of Ohio.

To assist the Commission, Maj. Gen. Glen E. Edgerton (ret), M. ASCE, of the Corps of Engineers, was engaged as Executive Director, and Col. Douglas H. Gillette was assigned by the Corps of Engineers to assist him. Mr. Reynolds was designated to act as contracting officer and was requested to prepare the necessary plans and specifications in conjunction with General Edgerton and Mr. Winslow, the latter acting in his capacity as Architect of the White House. Mr. Winslow was designated as Secretary of the Commission. Mr. Reynolds was assisted by H. G. Hunter, M. ASCE, Deputy Commissioner; Allan S. Thorn, AIA, Supervising

Architect of Public Building Service; C. W. Barber, structural engineer, and William H. Kelly, project engineer. Mr. Winslow was assisted by Harbin S. Chandler, AIA.

The Commission engaged as consulting engineers, Emil H. Praeger of New York and Ernest E. Howard of Kansas City, both members of ASCE, and as consulting architect, William Adams Delano, AIA, of New York.

Exterior Walls Retained

There was considerable discussion in Congress and elsewhere as to whether or not the building should be completely demolished and reproduced as closely as possible with walls of marble, limestone or granite, or possibly by the method of removing the stones forming the existing walls, laying them out on the White House lawn, carefully diagrammed and catalogued, and then replacing them in conjunction with an independent steel frame and fireproof construction to carry the interior walls and roof independently of the exterior walls. This last-mentioned method had been followed in connection with the restoration of many Egyptian temples and similar structures. Estimates showed that there would be a difference in cost of less than ten percent from the plan finally adopted as against the other methods above outlined. The decision to retain the old exterior walls met with general approval. It would have amounted to substantial desecration to have acted otherwise, particularly as it seemed to be quite unnecessary.

The structural and foundation problems and the question of whether or not the old exterior wall could be successfully underpinned, thus retaining the shell of the old building, constituted the most difficult and far-reaching question before the Commission in connection with the entire project and may be outlined as follows:

(a) Before the recent renovation, the White House was a four-story building consisting of ground floor, first floor, second floor and third floor. There was no basement except in one small area and the lower floor was at grade level. The construction was entirely "wall bearing." The exterior walls, generally of sandstone, were in reasonably good condition.

(b) There were two longitudinal interior walls, one at either side of the long central corridor, and transverse walls separating the rooms on the north and south sides of the building. These interior walls were of brick, generally about 3 ft thick in the upper floors and 4 ft thick in the lower floors.

(c) The construction of the floors was of various materials. The roof and third floor were of terra cotta blocks supported by steel beams; the second floor was of timber; and the first floor was of concrete slabs and steel beams. The pattern of framing was east to west and, therefore, the interior transverse walls carried a large percentage of the dead and live floor loads.

(d) All walls were supported on a clay soil about four feet below grade, but despite the heavy loading of the interior walls, there were generally no projecting footings under these walls as contrasted with generous spread footings under the exterior walls. As would be expected under this condition, the interior walls settled more than the exterior walls and large cracks developed at their junctions.

(e) A system of temporary steel shoring was carefully designed with two objectives: (1) to support the third floor and the roof and (2) to offer lateral support to the side-walls made necessary by the removal of the lateral support afforded by the old floors and walls.

(f) In the renovation, all interior walls and floors were demolished and only the exterior walls and the roof were retained. The steel erection was difficult inasmuch as the various columns and beams had to be threaded through windows and around the temporary shoring supporting the roof.

(g) In the renovated building a two-story basement was added to provide for increased mechanical and electrical equipment, adequate public lavatory facilities (previously nonexistent), much needed storage space, etc. The structural necessity for underpinning the exterior walls to a level some 20 ft below the levels of the original foundations served not only the structural purpose but permitted a much needed two-story basement. The soil at this lower level consisted of sand and gravel, a more favorable material than the clay at the higher level of the old footings. Despite the removal of the heavy interior bearing walls, the weight of the structure as renovated is greater than that of the original building. This is accounted for by the added weight of the underpinning walls and the new basement floors.

(h) A number of borings were taken, two large test pits were dug to the new foundation levels and tests were made on the soil in the test pits. Laboratory studies of soil samples at the new-

foundation level indicated that the sand and gravel stratum could safely support a unit load of 4 tons per sq ft. Independent designs were made on two bases: (1) Unit loads of 4 tons per sq ft for total dead plus live loads; and (2) Unit loads of 3 tons per sq ft for total dead plus about 20 percent of total live load. The superstructural live loads are generally about 100 psf. The final design was based on the second premise which produces a more realistic foundation loading condition.

Despite the fact that the soil under the new basement is of greater load bearing value than that at the higher level, borings at the site disclosed a condition which called for a thorough foundation analysis. A layer of silt, about 6 to 7 ft thick, was encountered about 17 ft below the bottoms of the new foundations. Below this silt stratum, the soil is generally sand and gravel to rock with some silt intermingled usually in thin layers. The underpinnings and the new basement thus extended the footings into a satisfactory substratum of hardpan.

(i) The first constructional operation was that of underpinning the exterior walls, 4 ft thick, with concrete in sections approximately 4 ft long and 24 ft in depth. Previous laboratory study of undisturbed soil samples made in the Soils Laboratory of Columbia University by Prof. Donald M. Burmister, M. ASCE, in collaboration with Mr. Praeger indicated that the underpinning operation would, in all probability, cause exterior wall settlements of about one-third of an inch during the construction period. Further, these same laboratory considerations also disclosed that, with the next constructional operation of the demolition of the interior bearing walls, floors and partitions and excavation of soil in the new basement area, a rebound or upward movement of the soil under the walls would, in all probability, result, even predicting that this rebound would be about one-sixteenth of an inch. Results of precise leveling by the U. S. Coast and Geodetic Survey substantiated the laboratory predictions.

(j) The final operation was the erection of structural steel, concrete floors, partitions, installation of finished floors and plaster that seemed to justify that there might be some additional settlement.

(k) During the entire constructional period levels were taken at various locations on the structure and at frequent intervals. Readings were to tenths of millimeters ($1/250$ in.) and the results were plotted at an exaggerated vertical scale. The last readings, taken after a six months' interval, indicated very slight movement, mostly upward and generally in a range of about $1/100$ in. The predictions made before work started were found to be accurate to within less than $1/8$ in. throughout the building despite the variations in load, thickness of silt and depth of overburden.

The whole underpinning and foundation problem was exhaustively considered by the Commission and its Executive Director with Commissioner Reynolds and the consulting engineers, Howard and Praeger, together with the general contractor, John McShain, and the underpinning and foundation contractors, Spencer, White & Prentiss. A complete record of the foundation studies is embodied in an article by Professor Burmister in the *Columbia Engineering Quarterly* for March 1952, and the precise leveling is covered in an article by Howard S. Rappleye, M. ASCE, of the U. S. Coast and Geodetic Survey and included in the *Transactions of the American Geophysical Union* for February 1952.

Nature of Contracts Outlined

The Act of the 81st Congress provided that: "Any cost-plus-a-fixed-fee general construction contract entered into in pursuance of this authority shall be awarded on competitive bidding among responsible general contractors upon the amount of the fixed fee to accrue from the performance of such contract." In consideration of the paramount importance of the underpinning and foundation work, the Act of Congress provided further, "That with the exception of any subcontract to be made by the general contractor for underpinning and foundation work and work incidental and appurtenant thereto, which may be a cost-plus-a-fixed-fee contract, all other subcontracts made by the general contractor shall be fixed price contracts awarded on competitive bids received from responsible subcontractors."

As the work progressed, and in certain instances, it became necessary for the Congress to give additional authority to the Commission to negotiate certain subcontracts in the interest of satisfactory progress. Congress eventually (in 1951) added \$361,000 to the initial appropriation to cover increased costs incident to the Korean War. The work under the general contract was widely advertised by Public Building Service on behalf of the Commission, and contractors throughout the country were asked to advise

whether or not they cared to bid with a submission of their qualifications. Fifteen potential general contractors eventually responded with bids ranging from \$100,000 to \$950,000 and averaging \$341,000, with most of the bids between \$200,000 and \$350,000. The contractors' fee consisted of a lump sum of money, exclusive of any addition to total construction costs and including the following:

- A. Gross anticipated profit.
- B. General overhead including:
 - (1) Interest upon monies.
 - (2) Sales fees, expenses and commissions.
 - (3) Rent of central and branch offices.
 - (4) Salaries and wages (including insurance and taxes thereon), traveling expenses of central and branch office employees, Contractor's Manager and Chief Accountant, all such employees as engineering, clerical, surveyors, estimators, expeditors, office managers, accountants, purchasers, paymasters, timekeepers, material checkers, clerks, stenographers, typists, watchmen, waterboys and all other job overhead employees, excluding Superintendent, Assistant Superintendent and General Foreman.
 - (5) Regular central and branch office expenses.
 - (6) Bonuses, premiums and rewards to managers or superintendents or other employees, or contributions to charitable institutions.
 - (7) Taxes and similar charges.
- C. Use of small tools and rope which will include all tools, devices and minor appliances classed as expendables.
- D. Use of engineering instruments, office equipment and supplies, communication service, including telephones, telegrams, etc.
- E. Use of construction equipment, whether for his own use or available to other contractors, excluding construction equipment furnished by subcontractors. This meant all costs except for electric current and labor of operators, and including the following:
 - (1) Rental.
 - (2) Depreciation, interest, taxes and insurance.
 - (3) Maintenance including labor therefor.
 - (4) Repairs including labor therefor.
 - (5) Fuel, grease, oil and consumable supplies required for operation.
 - (6) Shipping to and from the site and storage.

The low bidder was John McShain of Philadelphia with his bid of \$100,000. In accordance with the provisions of the Law, the subcontract for the foundation work, together with the shoring, was negotiated with Spencer, White & Prentiss on a cost-plus-a-fixed-fee basis. While there were many subsequent necessary variations in negotiating subcontracts as the work progressed, the contract for interior decorating and furniture, negotiated directly with John S. Burke, president of B. Altman & Co., was the only

direct contract of importance other than that of the general contract with John McShain.

Each and every subdivision of the work was important to the satisfactory completion of the whole. It must be admitted that the interest of the public primarily centers in the architectural finish, interior decoration, furnishings and furniture. The more fundamental and difficult underpinning and structural problems, with the decision that the old walls could be retained, are forgotten. Engineers have become prone to recognize that their success is primarily registered by negative considerations such as the failures that do not occur, the estimates that are not exceeded, time schedules not extended and other fundamentals.

In the Act creating the Commission, Congress inserted the following stipulation:

"At the earliest possible date, the Commission shall recommend to the Congress and the President a plan for (1) the preservation of any of such material which is of permanent historical importance, and (2) the sale, donation, destruction, or other disposition of the remainder of such material in the manner most consistent with its symbolic value and without commercial exploitation."

There was much interest manifested in the disposition of the souvenir material. The Commission developed a souvenir program and filled about 30,000 orders for small pieces of old material, such as wood, nails, stone and plaster.

Space limitations upon this article do not permit description of the architectural finish, the complicated mechanical and electrical installations including air-conditioning, television and radio, broadcasting and communications which would be of great interest to engineers. The interior decorations and the furniture, the pianos and the pictures of the Presidents and the First Ladies have otherwise been much publicized.

The Commission is indebted to so many organizations and individuals for their help and cooperation that it is impracticable to mention them all or to select the most important. That purpose can best be served by quoting the inscription in letters of bronze on marble over the 42nd Street entrance to Grand Central Terminal, New York:

"TO ALL THOSE WHO WITH HEAD, HEART AND HAND TOILED IN THE CONSTRUCTION OF THIS MONUMENT TO THE PUBLIC SERVICE, THIS IS INSCRIBED."

It was altogether a most interesting and fascinating experience, and an honor and a privilege to serve with Douglas Orr as representatives of the President. The Congressional members of the Commission were perfectly splendid. The Presidential family and staff were most courteous and considerate. Dr. John R. Steelman and Matthew J. Connelly, assistants to the President, and Howell G. Crim, Chief Usher, rendered valuable assistance throughout the project. The President gave much valuable advice and help and had an intense interest in the project, with a remarkably intimate knowledge of the White House, its history and requirements.

V

REPORT OF THE COMMISSION TO THE PRESIDENT AND THE CONGRESS ON BASIC PLAN OF CONSTRUCTION PROCEDURE

(August 22, 1949)

At its meeting on August 2, 1949, the Commission on Renovation of the Executive Mansion completed its consideration of the general plans by which the Executive Mansion might be renovated and modernized as contemplated by Public Law No. 40-81st Congress and Public Law 119-81st Congress.

The conclusions of the Commission are expressed in the following resolution which was adopted:

"RESOLVED, that this Commission approve a basic plan of construction procedure predicated upon the retention of the existing exterior walls of the White House, adequately underpinned, and upon substantially relieving the walls of the load of the floors and the roof which shall be carried on an independent frame with adequate foundation."

Since the Commission was first called together by the President on June 3rd, 1949, its members have been intensively study-

ing the various possibilities for renovation or reconstruction of the White House, and have endeavored to give careful consideration to all suggestions.

The major question has been the possibility, or otherwise, of retaining the existing exterior walls of the building as against completely demolishing the structure and endeavoring to reproduce the existing exterior walls in limestone, marble or granite, including the possibility of carefully removing the exterior stone facing and endeavoring to replace it in exactly its former position.

The problem is complicated, and in order to assist in its solution the Commission retained two outstanding consulting engineers, Ernest E. Howard of Kansas City, and Emil H. Praeger of New York, and an eminent architect, William Adams Delano of New York.

The plans upon which the Commissioner of Public Buildings and the White House Architect have been working for more than

a year have been predicated upon retaining the existing exterior walls.

The reports of Messrs. Howard and Praeger show that it is feasible and properly economical to retain the existing exterior walls. Mr. Delano strongly urges that course from the architectural viewpoint.

Estimates of cost indicate that the re-use of the existing stone might possibly be cheaper than the retention and underpinning of the existing walls by not to exceed 10%, although this difference is debatable in view of the uncertainties of damage in the re-handling of the stone. Reproduction of the facing in limestone might cost slightly more. The estimates based on the use of limestone, marble or granite vary up to a maximum for granite of about 5% in excess of the cost of retention and underpinning. The differences in cost are, therefore, minor and not a controlling factor in reaching a conclusion.

Numerous communications on the subject have been received by the Commission, a majority in favor of retention of the existing walls and others for demolition, but the great majority have been in opposition to the razing of the walls and have manifested a strong desire for a minimum of change.

It is the considered conclusion of the Commission that it is perfectly feasible and economical, and much more in keeping with the retention of what one writer characterized as the "symbolic shrine of American Democracy" for the old walls to be retained.

In any plan, a new steel or other adequate frame must be constructed and carried to proper depth of foundation to support the floors and the roof. It will also be necessary to underpin the old walls from a structural standpoint and likewise for the purpose

of securing much needed additional basement space. The roof structure will remain, although the arrangement of the third floor rooms will be changed somewhat in order to more nearly meet the pressing requirements of use.

It is the intention of the Commission to restore the interior of the historic rooms on the first and second floors with as little change as practicable. Unfortunately, the condition of the interior walls and of the second floor itself are such as to render complete renewal of the interior a necessity, but the historic rooms will be reproduced with a minimum of change.

It is also the intention to equip the White House with adequate modern facilities, including air-conditioning and proper fire exits.

In reaching its conclusion, the Commission has also considered the possibility that another Congress in the not far distant future might decide to build the President a new home elsewhere and to assign some other use to the present White House compatible and consistent with its traditions. Even though this might be a future possibility, the work now contemplated would have to be executed practically in its entirety in order to utilize the building for any other appropriate purpose. The work now proposed should be done in any event.

This Commission believes that it is the desire of the majority of the people that the White House, within its limitations, be made safe and adequate for its traditional use by the President and with as little change as may be consistent with modern construction. The plan adopted by the Commission is in accordance with that desire.

This report is submitted as a progress report in compliance with provisions of Sec. 2 (h) of Public Law 40—81st Congress.

VI

APPROXIMATE COST OF PRINCIPAL CATEGORIES OF WORK

(A tabulation of costs in round numbers of major categories of the work, in which operation under several subcontracts is grouped as to character of the work rather than manner of its division for contractual purposes.)

1. Dismantling and demolition.....	\$160,000
2. Underpinning, excavation, column footings and temporary shoring.....	559,000
3. Concrete and cement work, including guniting...	301,000
4. Structural steel.....	197,000
5. Brick and structural tile.....	189,000
6. Exterior stone.....	131,500
7. Interior stone and marble.....	247,000
8. Structural glass, and ceramic, quarry, rubber and asphalt tile.....	41,000
9. Ornamental metal, aluminum, and miscellaneous iron and steel.....	117,000
10. Carpentry.....	78,000
11. Cabinet work and finish hardware.....	417,500
12. Wood flooring.....	74,500
13. Hollow metal.....	58,000
14. Lathing and plastering.....	275,000

15. Roofing and sheet metal.....	\$55,500
16. Painting.....	86,000
17. Mechanical installations, including plumbing, heating, air conditioning and ventilating, kitchen and laundry equipment.....	675,000
18. Electrical installations, including power, radio, television, telephone, protective system, lighting, new lighting fixtures, and renovation of fixtures reused.	603,500
19. Elevators and dumbwaiters.....	84,000
20. Temporary structures, cleaning and protection, and maintenance of services.....	232,000
21. Miscellaneous construction.....	113,500
22. Insurance, taxes, welfare funds, bond.....	92,000
23. General Contractor's fee.....	100,000
24. Special construction charges, e. g., borings, surveys, testing materials, etc.....	42,500
25. Furnishings and furniture.....	213,500
26. Design drawings and specifications.....	394,500
27. Supervision of construction.....	193,500
28. Office expenses, Public Buildings Service.....	30,000
Total.....	5,761,000

VII

CONTRACTS AND SUBCONTRACTS

Prime Contracts		
Name	Type of Work	Amount
John McShain, Inc.....	General Contractor.....	\$4, 880, 000
B. Altman & Co.....	Furniture and Furnishings...	208, 000
Subcontracts Issued Under the General Contract		
Spencer, White & Prentis..	Foundation and Underpinning.	534, 624
Bethlehem Steel Co.....	Furnishing and Fabrication of Structural Steel.	116, 771

Subcontracts Issued Under the General Contract—Continued		
Name	Type of Work	Amount
Edward W. Minte Co.....	Painting of Temporary Building and Tree Boxes.	\$1, 790
United Clay Products Co..	Construction of Steel Utility Building (Fort Myer).	7, 131
Otis Elevator Co.....	Removal of Passenger Elevator and Dumbwaiter.	3, 808
The Blind Shop, Inc.....	Venetian Blinds for Temporary Building.	154

Subcontracts Issued Under the General Contract—Continued

<i>Name</i>	<i>Type of Work</i>	<i>Amount</i>
Philip Carey Mfg. Co.	Pipe Insulation.....	\$932
Edward W. Minte Co.	Painting of Cafeteria and Storage Shed.	810
Harry Alexander, Inc.	Labor for Temporary Electric Wiring.	24, 629
Standard Engineering Co. .	Labor for Temporary Plumbing and Heating Piping.	17, 812
Arlington Asphalt Co.	Asphalt Treatment Floor of Store Room (Fort Myer).	355
McCormick Construction Co.	Erection of Structural Steel.	66, 275
Harry Alexander, Inc.	Temporary Electric Work...	13, 145
Joseph Spagna, Inc.	Placing Reinforcing Steel... (Tunnel and Shop Only).	1, 732
Reuben L. Anderson and Associate, Carlson Bros.	Mechanical Work (Plumbing, Heating, Air Conditioning, Ventilating, Vacuum Cleaning).	616, 573
Warren-Ehret Co.	Waterproofing of Underground Mechanical Area.	1, 169
Otis Elevator Co.	Elevator and Dumbwaiter Installation.	75, 754
Morse-Boulger Co.	Incinerator and Can Washer.	2, 995
Harry Alexander, Inc.	Electrical Work.....	500, 284
Nathan-Straus-Duparquet, Inc.	Kitchen Equipment.....	23, 269
Troy Laundry Machine Div., American Machine & Metals.	Laundry Equipment.....	3, 763
Novinger's Inc. & James A. Kane Co.	Lathing & Plastering.....	212, 168
Gunitite Construction Co. .	Guniting.....	6, 800
Jamestown Metal Products Co.	Kitchen Cabinets, Counters, etc.	17, 388
John Hasbrouck Co.	Wood Flooring.....	74, 500
Knipp & Co., Inc.	Millwork and Cabinet Work.	380, 348
The Mosler Safe Co.	Wall Safes.....	5, 765
Easterday - Duckworth Roofing Co.	Waterproofing, Dampproofing, Sheet Metal Work and Roofing.	55, 327

Subcontracts Issued Under the General Contract—Continued

<i>Name</i>	<i>Type of Work</i>	<i>Amount</i>
A. F. Jorss Iron Works, Inc.	Miscellaneous Metal Work..	\$42, 921
A. F. Jorss Iron Works, Inc.	Ornamental Metal Work....	49, 833
William Dunbar Co., Inc. .	Painting Mechanical Equipment.	4, 524
Standard Art Marble & Tile Co.	Interior Stone Work.....	222, 541
Armstrong Cork Co.	Thermal Insulation.....	25, 900
McLeod & Romberg.....	Exterior Stone Work.....	128, 302
Pittsburgh Plate Glass Co.	Glass, Glazing, and Structural Glass.	41, 005
John W. Johnson, Inc.	Interior and Exterior Painting.	81, 321
Peter Bratti Tile Corp. . .	Ceramic Tile Work.....	14, 597
Penn Metal Corporation of Pennsylvania.	Metal Lockers.....	1, 752
John H. Hampshire Co. .	Asphalt and Rubber Tile...	4, 056
Zero Weather Stripping Co.	Insect Screens.....	3, 000
Zero Weather Stripping Co.	Weatherstripping.....	1, 981
James A. Cassidy Co.	Grilles for Fire Alarm and Signal Boxes, etc.	20, 897
Pittsburgh Plate Glass Co.	Aluminum Work—Sun Room.	6, 692
G. M. Ketcham Mfg. Corp.	Bathroom and Toilet Accessories.	12, 593
Knipp & Co., Inc.	Hollow Metal Doors.....	13, 484
O. R. Evans & Bro.	Special Lighting Fixtures...	73, 500
Atlas Machine & Iron Works, Inc.	Sub-frames for Hollow Metal Doors.	1, 731
Standard Engineering Co.	Work on Insulation of Hood and Ceiling over Kitchen Range.	750
Arlington Asphalt Co.	Reconstruction of Roads, Bituminous Paving.	5, 198
City Window Cleaners. . .	Special Housecleaning Work	1, 935

VIII

MISCELLANEOUS INFORMATION

Location of White House

South of Pennsylvania Avenue, between East and West Executive Avenues
Grounds cover an area of about 16 acres

Dimensions

168 feet long
85½ feet wide (principal rectangle, excluding porticos)
152 feet wide (maximum, including porticos)
60 feet high from grade of south lawn to top of parapet
50 feet 4 inches from grade of north lawn to top of parapet
10 feet from top of parapet to highest point of roof

Content

1,071,000 cubic feet, ground floor and above
312,000 cubic feet, basement and basement mezzanine
150,000 cubic feet, mechanical area (outside basement)
Excluding basement rooms, storage rooms, corridors, stair halls, and similar minor rooms, the building has:
Ground floor, 12 rooms
First floor, 7 rooms
Second floor, 14 rooms, 7 baths, 1 lavatory
Third floor, 21 rooms, 9 baths
Counting utility, storage, and basement rooms, the building has
132 rooms, including:
18 family or guest bedrooms
7 servants' bedrooms
49 utility rooms
1 main kitchen

Content—Continued

Counting utility, storage, and basement rooms, the building has
132 rooms, including:—Continued
1 diet kitchen
1 servants' dining room
1 servants' sitting room
1 housekeeper's room
3 ushers' rooms
1 medical clinic
1 dentist room
1 laundry room
1 valet room
1 barber room
3 pantries
The building has:
69 closets
147 windows
8 skylights
412 doors
29 fireplaces
12 chimneys
3 elevators
2 sidewalk lifts
2 dumb waiters

Flooring

13,860 square feet Herringbone parquetry
2,904 square feet Fountainbleau parquetry
1,310 square feet Marie Antoinette parquetry

Flooring—Continued

558 square feet Basket Weave parquetry
260 square feet Monticello parquetry
4,139 square feet plain oak
10,863 square feet plastic tile
7,537 square feet stone
6,607 square feet quarry tile
6,423 square feet marble
2,813 square feet rubber tile
1,484 square feet ceramic tile

Roofing

8,915 square feet slate
3,255 square feet quarry tile
743 square feet monel metal
187 square feet lead coated copper

Marble and Stone

23 kinds of marble and stone
250 different locations in the building
10 kinds were used in old structure

Earth Excavated

9,500 cubic yards, main building (basement)
5,000 cubic yards, underpinning, footing, and shoring
4,000 cubic yards, mechanical area
1,000 cubic yards, plumbing and electrical trenches

Partial List of New Materials or Equipment

800 tons structural steel
110 tons reinforcing steel
7,861 cubic yards of concrete
257,500 square feet mesh
46,750 linear feet steel pencil rods

Partial List of New Materials or Equipment—Continued

1,000 cubic yards gravel
278,900 brick
134,000 pieces 12" x 12" structural tile
518 tons sand
65 tons lime
60 tons cement
20,000 linear feet 1" x 3/8" flat iron
110,000 linear feet 3/4" channel iron
20,000 linear feet 1 1/2" channel iron
9,000 linear feet 1 1/2" x 1 1/2" x 1/4" angle iron
5,300 pieces monel metal tie wire
120 tons hard wall plaster
54 tons moulding plaster
45 tons finishing lime
21 tons Portland cement plaster
19 tons Keene cement plaster
4,655 cubic feet marble
7,500 cubic feet limestone
585 cubic feet granite
120,000 linear feet rigid steel electrical conduit
500,000 linear feet electric wiring
2,050 electric plugs or switches
450 lighting fixtures
30,000 pounds of aluminum sheets
2,700 pounds stainless steel or monel metal sheets
92 convactor radiators
23,628 linear feet brass pipe, 8" to 1/4"
9,802 linear feet black steel or iron pipe, 12" to 1/4"
2 refrigeration machines, 200 tons each
20 centrifugal air conditioning fans, various sizes
570 gallons exterior paint
895 gallons interior paint

IX

DISPOSITION OF SURPLUS MATERIALS

The important duties of the Commission in disposing of articles and materials removed from the White House and not required for re-use in the building are prescribed in Public Laws 40 and 377, 81st Congress, 1st Session. The final report of this work was submitted to the Congress on June 30, 1952.

Much time and study were devoted to the development of the plan for the disposition of the surpluses as required by those statutes. The Advisory Board on National Parks, Historic Sites, Buildings and Monuments was consulted on the subject and gave the opinion that important articles or assemblies which have intrinsic as well as historical value and usable building material of considerable practical value should be used for Federal purposes only, and that the rest of the surplus should be destroyed. Other authorities were consulted informally and all the views expressed were given due consideration. It was finally concluded that, except for articles of considerable importance which ought to be held for future use at the White House, the surplus should be disposed of to governmental agencies, to appropriate non-governmental institutions and to patriotic organizations, groups, and individuals, who might desire the material for use or preservation.

Furniture and furnishings, which are accounted for as public property in the established manner by the custodians of White House property, were not disposed of by the Commission. They were left in their normal custody for use and for disposition when no longer usable or needed as provided by law and regulations.

The general plan was adopted by the Commission on January 6, 1950. It was followed by a supplement, adopted on September 14, 1950. Essentially the plan and supplement provided for the storage and care of all materials removed from the building, determination of the materials not required for re-use, the classification of the surplus material in four principal categories, and the appropriate disposition of the materials in each category. The four classes are:

Class I. Important articles or assemblies which retain their identities after removal, such as a mantel, or a complete ornament, and which have intrinsic as well as historical value.

Class II. Usable building material of considerable practical value, including radiators, electrical equipment, pipe and structural steel, with little or no sentimental value and not readily identifiable as coming from the White House.

Class III. Pieces of durable material, such as timbers, bricks, facing stones, and panelling, of some possible value for practical use, but of principal value on account of their association with the White House.

Class IV. Disintegrated, broken, or perishable material.

The plan prescribed that articles of Class I be allocated to designated Federal agencies, public museums, libraries, universities, colleges and other public or quasi-public institutions; that articles of Class II be allocated for re-use in other governmental construction, for sale as scrap, or for destruction as necessary to avoid commercial exploitation; and that material of Class IV be disposed of in the most economical manner.

The supplement provided for the distribution to the public, in an equitable manner without cost to the Government and with safeguards against misuse, of articles of Class III, such as bricks, pieces of stone, wood, or metal, and the like, which have little or no tangible value, but which were desired by many citizens for preservation as souvenirs of the historic building.

The following paragraphs outline the principal operations under the plan and the results, with figures in round numbers. Detailed statistical and financial information in precise figures are contained in the report to Congress.

Class I Material

The surplus mantels formed the principal part of this category. Twenty of the mantels removed from the building were not required for re-use because they were replaced by more suitable mantels. It was decided to allocate these mantels to the museums and similar institutions in the best circumstances to preserve and exhibit them. The American Association of Museums was consulted and suggested a large number of museums which appeared to be appropriate repositories. Thirty were selected as apparently the most desirable, in consideration of size, character, geo-

graphical location, and other pertinent factors. These institutions were invited in turn to make their choices from the mantels available. At the same time portions of the old plaster ornament were offered also, but little of the ornament was requested. Eighteen of the museums consulted did not accept the invitation for various reasons. The following requested and received one mantel each, except the National Museum to which 4 mantels were allocated. The museums are listed below with the number of the room from which each mantel was removed:

<i>Museum</i>	<i>Room No. of Mantel</i>
National Museum, Washington, D. C.	G-10, East, 212, 213
Denver Art Museum, Denver, Colorado.	G-26
Sam Rayburn Foundation, Bonham, Texas.	217
Boston College, Boston, Mass.	East
Morris House, Germantown, Penn.	224
Daughters of the Confederacy, Mansfield, La.	East
Buffalo Historical Society, Buffalo, N. Y.	G-15
Chicago Historical Society, Chicago, Ill.	211
St. Louis Art Museum, St. Louis, Mo.	214
Brooklyn Museum, Brooklyn, N. Y.	220
Atlanta Art Association, Atlanta, Ga.	219
Truman Library, Independence, Mo.	State Dining Room

The five mantels finally remaining were turned over to the Smithsonian Institution for use in a future exhibit, or for loan to other museums as might later be deemed fitting.

Class II Material

This category included articles and materials of a rather wide variety but of small value because of their condition, ranging generally from fair to very poor. Because of the possibility that articles even of this kind could be exploited on the basis of their past association with the White House and the small commercial values involved, it was decided that sale in the ordinary manner would be undesirable. It was believed to be preferable to make surplus of this kind available to other government departments for practical use rather than destroy it. However, articles of the kinds usually disposed of by salvage officers, either for repair uses or by sale as scrap or junk, could be disposed of safely in that manner if intermingled with similar salvage stocks accumulated from other operations so that the identification of material from the several sources would not be practicable.

The problem of disposal of Class II material then became chiefly one of finding the practical purposes which could be served to best advantage, allocating the material accordingly, setting aside the quantities of materials that might also be included in Class III and required for distribution as mementos, and disposing of the rest through salvage channels like other government property no longer usable or needed in the government service.

The following statement indicates the nature and magnitude of the principal allocations that were made to other agencies for use in their work:

(a) To the operational staff of the White House, approximately 5,000 feet, board measure, of used lumber, 50 cubic feet of stone, 25 cubic feet of marble, small quantities of brick, plaster ornament, and miscellaneous materials remaining from the souvenir program, for retention and future use.

(b) To the Post Engineer, Fort Myer, Va., 10,000 brick, 12 used doors, 4,000 sq. ft. used flooring, for use in construction work at that post.

(c) To the Engineer Replacement Training Center, Fort Belvoir, Va., 100 used steel beams of various sizes and shapes, 10 truckloads of scrap lumber, used pine doors and small quantities of metal, brick, stone and plaster, for use in training and construction at that center.

(d) To the Post Engineer, Fort Belvoir, Va., 12,000 sq. ft. used flooring and 3 truckloads of used wood shelving, for use in construction at that post.

(e) To the Department of Corrections, District of Columbia, 1 cast iron stair, 2 truckloads of used steel beams and pipe, wood trim and shutters, 1 refrigerator, 7 fans, miscellaneous metal grilles, firebacks, plumbing fixtures, and doors in damaged but repairable condition, for use in construction at the institutions at Lorton, Virginia.

(f) To the Office of National Capital Parks: All material and equipment of the temporary construction buildings, demolished and removed by that office, 4 truckloads of stone, and miscellaneous items of used equipment in poor but usable condition, for use in construction in the parks.

(g) To Mount Vernon, 95,000 used bricks for restoration of walls and buildings originally constructed of similar brick.

(h) To the Salvage Officer, Fort Myer, Va., the remaining articles and materials of this category for which no practical use could be found, for disposition as provided by the law and regulations for salvage materials.

The total fair value of the material allocated to other agencies is estimated at between \$30,000 and \$40,000. The material delivered to the salvage officers may have had a commercial value of \$1,000 or \$2,000 above the costs of transportation.

Class III Material

The distribution of Class III material as mementos under the provisions of the supplement to the Plan for the Disposition of Surplus Materials began on January 15, 1951. The acceptance of applications from the general public closed, after two extensions of time (to August 31, 1951, and to September 30, 1951) on October 31, 1951. Distribution of the material of this class was carried on from a small sub-office at Fort Myer, Virginia, using storage, shop, and office facilities available there.

Major James V. Little, Corps of Engineers, was in immediate charge of the work. The personnel of the sub-office also included, for all or a portion of the time: Kenneth L. Ahmay, Bessie C. Buscher, William R. Clark, Nicholas G. Dounis, Peter D. Guadagno, Isabel Pencke, Keith L. MacPhee, Agnes E. Margetson, Thomas P. Ross, Elizabeth S. Saunders, Jean R. Stephens, M. Sgt. Charles E. Stull, Thomas J. Trodden, and Milton W. Van Dyke II. The working force during the period of active operations averaged eight persons, and the maximum at any one time was eleven. The sub-office was closed on November 30, 1951, and thereafter issues were made only in exceptional cases when it was practicable to do so with the facilities remaining available.

Before beginning the distribution it was decided as a matter of economy that the offerings would have to be made in a predetermined manner without many deviations from the standard issues adopted and with a minimum of expense for preparing the items for distribution. Accordingly the material was offered in individual pieces or small lots, called "Kits," from which mementos could be made. The kits were issued without charge for the material, but a charge in the amount of the estimated cost of handling and administration was made for each kit. The kits were sent, mail or transportation charges collect, only in response to signed applications accompanied by the required remittances. The recipients were expected to assemble, clean, polish, or otherwise process the material to make attractive souvenirs. A small metal authentication plate was furnished with each kit. The entire operation was designed to be self-supporting and it turned out to be so, by a considerable margin.

The kits and the prices of each are listed below:

Kit No. 1—Enough old pine to make a gavel.	\$2.00
Kit No. 2—Enough old pine to make a cane.	2.00
Kit No. 3—A small piece of old stone and an old lath nail 1¼ inches long.50
Kit No. 4—A small piece of old stone and an old square nail, 2½ inches long.50
Kit No. 5—A piece of old pine, an old nail, a small piece of stone, old copper wire, suitable for making a plaque.	2.00
Kit No. 6—A small piece of old metal.50
Kit No. 7—A small piece of old pine.50
Kit No. 8—A piece of hand split lath about a foot long. .	.25
Kit No. 9—A small piece of stone.50
Kit No. 10—One brick, as nearly whole as practicable. .	1.00
Kit No. 11—Enough brick for a fireplace.	100.00
Kit No. 12—Enough stone for a fireplace.	100.00
Kit No. 13—Two pieces of stone to make bookends.	2.00

In addition to the kits listed on the application, 1,100 special kits, designated as 3B and 4B, were made up by embedding in a transparent plastic block the articles comprising Kit No. 3 or No. 4. These special kits were offered only to members of the Congress, other high officials of the Government, and persons who had a close relationship to the renovation project. The charges for these kits were \$3.50 and \$5.00, respectively.

While it was deemed inconsistent with expeditious and economical operation of the distribution program to offer generally to the public any articles other than the prescribed kits, the special requests received were met, when it was found practicable to do so, by furnishing larger pieces than normal or combinations for special purposes, and by the distribution locally of items which were avail-

able only in small quantities, insufficient to warrant listing on the application form. The charge for the special kits was established in each case on the same basis as for the regular kits. For example, larger pieces of wood were charged at \$1.50 per foot board measure, and larger pieces of stone at \$8.50 per cubic foot.

The most popular kit was No. 4, material for a paperweight, of which 5,600 were distributed. Next was No. 1, wood for a gavel, with 5,000. Third was No. 10, a brick, 4,500. The quantities of the other kits issued ranged downward to No. 11, bricks for a fireplace, with 63; and No. 12, stone for a fireplace, 56. One hundred seventy special items were issued.

Information of the availability of the souvenir material to the public was given to the press in a release of January 13, 1951, and also subsequently in response to numerous inquiries by news correspondents and special writers. The information was published by the principal newspapers throughout the country and by many smaller ones as well. Interested persons were invited to write to the Fort Myer, Virginia, office to request an application blank; and they did so in numbers that were for a time overwhelming. Similar press releases were given out from time to time when the correspondence appeared to be on the wane and the backlog of unfilled orders was reduced to manageable proportions.

During the course of the program approximately 100,000 pieces of mail were received. The necessary information was furnished in response to each request or inquiry, and when the required application and remittance were received in each instance, the kit ordered

was shipped, postage or other charges collect, or delivered to the applicant in person in some cases. Nearly 30,000 kits were furnished, and \$50,000 collected. The costs of the work of distribution amounted to \$40,000, leaving an unobligated balance of \$10,000 in round numbers at the conclusion of the program. The exact amount of the unobligated balance deposited in the Treasury is \$10,034.70.

The Class III material on hand at the end of the souvenir program, consisted primarily of wood, bricks, and stone. The usable material was reclassified as Class II material and allocated accordingly. The unusable material was classified in Class IV and destroyed. Pieces of brick and stone, for which no immediate use could be found have been left in open storage at Fort Myer, Virginia, for such future use as may be found for them. The storage yard is not accessible to the public and the material is mingled with other material so that its identity is no longer determinable.

The entire operation of the distribution of souvenir material was carried on with notable economy and efficiency. Special credit is due the personnel who had a direct part in that work.

Class IV Material

The non-combustible material which was deemed to have neither practical value nor historical interest sufficient to warrant its preservation has been buried in a dump at Fort Myer, Virginia. Combustible material of this class was burned in the District of Columbia incinerator under the supervision of a representative of the Commission.

X

NEW FURNITURE AND FURNISHINGS

The following is a list of the new furniture and furnishings. In addition, most of the old furniture was renovated as required, and reused.

Ground Floor

G-1—Library

- 1 pair silk gauze curtains
- 2 large round drum tables
- 2 lamps and shades

G-2—Broadcast Room

- 1 rug with lining
- 3 pairs gold damask draperies with valances
- 2 end tables
- 2 coffee tables
- 4 lamps and shades

G-9—Map Room

- 1 pair silk gauze curtains

G-10—Diplomatic Reception Room

- 1 chenille rug with lining
- 2 benches
- 1 sofa
- 2 tables
- 2 consoles
- 2 chairs

G-14—China Room

- 1 pair silk gauze curtains

G-15—Billiard Room

- 2 pairs silk gauze curtains

G-18—Ground Floor Hallway

- 1 new lining for old rug
- 2 pairs double-faced draperies

First Floor

#101—East Room

- 7 pairs gold silk damask draperies
- 7 pairs silk casement curtains

#102—Green Room

- 2 pairs silk casement curtains

#103—Blue Room

- Blue silk damask wall covering
- 3 pairs blue silk damask draperies and valances
- 3 pairs silk casement curtains

#104—Red Room

- Red silk damask wall covering
- 2 pairs red silk damask draperies and valances
- 2 pairs silk casement curtains
- 1 wool chenille red rug with lining

First Floor—Continued

#105—State Dining Room

- 5 pairs silk casement curtains
- 1 green wool chenille rug with lining
- 24 special reproduction chairs

#106—Family Dining Room

- 2 pairs silk casement curtains

#106-P—Butler's Pantry

- 3 pairs silk gauze curtains

#107—Ushers' Office

- 1 pair silk casement curtains
- 1 pair draperies
- 1 chenille wall to wall carpet
- 3 desks
- 6 desk chairs

#108—Main Hallway

- 3 pairs silk casement curtains
- 1 chenille red wool carpet with lining

Main Stairway and Landings

- Chenille red wool carpeting as runners with lining
- 1 pair red silk damask draperies
- 1 pair silk gauze curtains

Second Floor

#229—West Sitting Hall

- 1 beige chenille rug with lining
- 1 pair toile draperies and valance
- 1 pair silk gauze curtains
- 1 loveseat
- 2 sofas
- 1 bench
- 1 desk
- 1 commode
- 1 round mahogany table
- 4 lamp tables
- 2 coffee tables
- 1 small club chair
- 6 lamps and shades

#228—Center Hallway

- 1 beige chenille rug with lining
- 6 lamps and shades
- 6 tables

#225—East Sitting Hall

- 1 beige chenille rug with lining
- 1 pair green damask draperies and valance
- 1 pair silk gauze curtains

Second Floor—Continued

211—Northeast Corner Bedroom

- 1 chenille rug, lime color, with lining
- 2 pairs printed chintz draperies and valances
- 3 pairs silk gauze curtains (1 for bathroom)
- 1 dust ruffle, topper, and bolsters for bed
- 1 box spring and mattress
- 2 chests of drawers
- 1 drop leaf table
- 2 small chairs
- 4 lamps and shades

212—Rose Room

- 1 blue chenille rug with lining
- 2 pairs pink taffeta draperies
- 2 pairs silk gauze curtains
- 1 topper, dust ruffle, and curtains for canopy bed
- 1 dresser
- 1 dressing table
- 1 sofa
- 5 lamps and shades

213—Bedroom East of Book Storage Room

- 1 blue chenille rug with lining
- 1 pair printed cotton draperies and valance
- 1 pair silk gauze curtains
- 2 small chests
- 1 small provincial table desk
- 1 powder table
- 1 open arm chair
- 1 chaise longue
- 4 lamps and shades
- 1 step table
- 1 marble top table
- 1 side chair

214—Bedroom West of Book Storage Room

- 1 new lining for old rug
- 1 pair printed toile draperies and valance
- 1 pair silk gauze curtains
- 1 topper, dust ruffle, and draperies for canopy bed
- 4 tables
- 1 desk table
- 1 desk chair
- 5 lamps and shades

233—Book Storage Room

- 1 pair silk casement curtains

215—Small Office Near West Stair Hall

- 1 pair silk casement curtains

216—Northwest Drawing Room

- 1 green chenille rug with lining
- 2 pairs print draperies and valances
- 2 pairs silk casement curtains
- 1 four-cushion sofa
- 1 wing chair
- 1 dresser, convert drawers to cabinet
- 1 table desk
- 2 yarrow chairs
- 1 marble top coffee table
- 1 marble top round table
- 1 ladies' chair
- 1 open arm chair
- 4 lamps and shades
- 1 what-not

217—Northwest Corner Bedroom

- 2 pairs pink silk draperies and valances
- 2 pairs silk glass curtains
- 1 pale green chenille rug, with lining
- 1 dust ruffle, topper, and dressing table skirt
- 1 upholstered rocker
- 1 six-drawer dressing table, mirrored top
- 1 bench
- 3 lamps and shades

218—Southwest Corner Bedroom

- 1 gray chenille rug with lining
- 2 pairs printed chintz draperies with valances
- 2 pairs silk gauze curtains
- 1 bed
- 1 topper and dust ruffle for bed
- 1 table
- 1 double dresser
- 1 pier cabinet
- 1 bench
- 3 lamps and shades

Second Floor—Continued

219—Southwest Drawing Room

- 1 chenille rug, amethyst, with lining
- 2 pairs print draperies and valances
- 2 pairs silk gauze curtains
- 2 small wing chairs
- 2 coffee tables
- 1 table desk
- 1 desk chair
- 1 arm chair
- 5 lamps and shades

220—Bedroom West of Study

- 1 green chenille rug with lining
- 2 pairs printed chintz draperies with valances
- 2 pairs silk gauze curtains
- 1 bed
- 1 topper and dust ruffle for bed
- 2 commodes
- 3 end tables
- 1 chest of drawers
- 1 tall cabinet
- 1 chaise longue
- 2 oversize chairs
- 1 bench
- 5 lamps and shades

221—Oval Room

- 3 pairs silk damask draperies
- 3 pairs silk gauze curtains
- 1 oval rug, green, with lining
- 3 chairs
- 2 tables
- 1 drum table
- 1 ottoman
- 3 lamps and shades

222—Monroe Room

- 1 new lining for old rug
- 2 pairs printed chintz draperies and valances
- 2 pairs silk gauze curtains
- 2 cabinets
- 1 tall cabinet
- 1 drum table
- 1 coffee table
- 1 chaise longue
- 1 bench
- 4 lamps and shades

223—Lincoln Room

- 1 wall to wall Brussels special pattern carpet with lining
- 2 pairs embroidered voile draperies with valances
- 2 pairs silk gauze curtains
- 1 topper and dust ruffle for bed
- 2 yarrow chairs
- 1 special loveseat
- 4 lamps and shades
- 2 chests of drawers
- 2 round tables

224—Southeast Corner Bedroom

- 1 beige chenille rug with lining
- 2 pairs chintz draperies
- 2 pairs silk casement curtains
- 1 bathroom window casement curtain
- 1 topper, dust ruffle, and bolsters for bed
- 1 box spring and mattress
- 2 bachelor chests
- 2 chairs
- 1 writing desk
- 1 butler tray table
- 4 lamps and shades

Third Floor

Sun Room

- 1 set printed chintz draperies
- 1 set bamboo blinds
- 1 bamboo sofa
- 2 tub chairs
- 1 arm chair
- 4 side chairs
- 1 table
- 1 day bed
- 2 stools
- 2 lamp tables
- 1 coffee table
- 2 lamps and shades

Third Floor—Continued

Sun Room—Continued

- 1 commode
- 1 nest of tables

Third Floor Ramp & Serving Foyer

- 1 chenille runner, small rug, and lining

Third Floor Hall

- New linings for old rugs
- 2 coffee tables
- 2 sofa tables
- 1 console table
- 1 side chair

Room # 301

- 2 beds
- 1 dresser and mirror
- 1 night table
- 1 double chest
- 1 side chair
- 2 springs and mattresses
- 3 lamps and shades
- 2 bedspreads and dust ruffles
- 1 table (Williamsburg)
- 1 upholstered chair

Room # 302

- 3 lamps and shades
- 1 bed
- 2 night tables
- 1 Williamsburg bachelor chest
- 1 side chair
- 1 upholstered chair
- 1 bedspread, dust ruffle, and bolsters for bed

Room # 303

- 2 beds
- 1 night table chest
- 1 double dresser and mirror
- 1 chest on chest
- 1 side chair
- 1 upholstered chair
- 2 bedspreads and dust ruffles
- 2 springs and mattresses
- 2 lamps and shades

Third Floor—Continued

Servants' Rooms—# 315—# 322

- Furnished generally with bed, chest of drawers, chair, lamp, and organdy curtains

Room # 323

- 2 canopy beds
- 1 night stand
- 1 double chest and mirror
- 1 chest
- 1 Williamsburg side chair
- 1 Williamsburg lamp table
- 1 upholstered chair
- 2 springs and mattresses
- 3 lamps and shades
- 2 bedspreads, ruffles, and canopy tops

Room # 324

- 1 lining for old rug

Room # 327

- 2 canopy beds
- 1 double dresser and mirror
- 1 Williamsburg table
- 2 Williamsburg side chairs
- 1 Williamsburg gate leg table
- 1 upholstered chair
- 3 lamps and shades
- 1 night table chest
- 2 springs and mattresses
- 2 bedspreads and dust ruffles

Room # 328

- 1 upholstered chair
- 1 side chair
- 2 bedspreads and dust ruffles
- 2 lamps and shades

Room # 329

- 2 sets beds on legs
- 2 night stands
- 1 dresser and mirror
- 1 side chair
- 1 upholstered chair
- 2 pairs bedspreads, dust ruffles, and bolsters
- 3 lamps and shades

Miscellaneous

- 156 triplex white window shades

Donations Received During Renovation Period

Articles Donated

- 2 Adam Sofas
- Mahogany Four-Poster Bed
- Wire Front Bookcase
- 2 Adam Chairs
- Grandfather Clock
- Crystal Chandelier
- Crystal Chandelier
- Crystal Chandelier
- 18th Century Dining Table
- Chinaware Set
- Sofa
- Overmantel and Candelabra
- Coat Cabinets
- Lithographic Portrait of Lincoln as a Young Man
- Rubber Door Mats

Location in White House

- East Room
- Room 212—Rose Room
- Monroe Room
- Broadcast Room
- First Floor Landing of Main Stair
- Red Room
- Main Entrance Hall
- President's Study
- Second Floor Center Hall
- State Dining Room
- Pantry
- Red Room
- State Dining Room
- Main Entrance Hall
- Lincoln Room
- North and South Entrance Lobbies

ACKNOWLEDGMENTS TO PERSONNEL

The Commission desires to record its appreciation of the valuable assistance given by the members of the Commission's staff and the following individuals in the course of the renovation work:

Consultants to the Commission

William Adams Delano, Architectural
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Emil H. Praeger, Engineering

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David E. Finley, Interior Decoration
Edward F. Neild, Sr., Architectural
Charles B. Spencer, Engineering

The White House Office

John R. Steelman, Assistant to the President
Matthew J. Connelly, Secretary to the President
Charles G. Ross, Secretary to the President
Joseph Short, Secretary to the President
William J. Hopkins, Executive Clerk
Frank K. Sanderson, Administrative Officer

The White House Staff

Charles Claunch, White House Usher
John Hiser, Principal Operation Engineer
Howard Johnson, Foreman Electrician
Robert Redmond, Foreman Gardener
Wilson Searles, White House Usher
Charles Shepherd, Foreman, Carpenter and Paint Shop
Bert G. Smice, Building Inspector
Earl Trainer, Foreman Plumber
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Donna Pollak, Administrative Accounts Section
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U. S. Secret Service

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James K. Fox, Protective Research Section
Hobart N. Francis, Inspector, White House Police
Leonard P. Hutchinson, Agent in Charge, Protective Research Section

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National Capital Parks

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George W. Harding, Chief, Horticultural Division
Abbie Rowe, Official Photographer

Department of Commerce

Bureau of Public Roads

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National Production Authority

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Department of Agriculture

Division of Forest Products

L. W. Smith, Wood Technologist

Commission of Fine Arts

Pietro Belluschi, Member
George Biddle, Member
Felix W. deWeldon, Member
David E. Finley, Chairman
Joseph Hudnut, Member
Edward F. Neild, Sr., Member
Elbert Peets, Member

Contractors' Personnel

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John McShain, President
J. Paul Hauck, Manager
Frank M. Harmon, Superintendent
Edward J. Barnes, Project Office Manager

John McShain, Inc., General Contractor—Continued

Murray G. Bonham, General Foreman
Frank E. Cerceo, Bricklayer Foreman
John J. Coursey, Cement Finisher Foreman
Joseph E. Gouse, Carpenter Foreman
Robert A. Kinsley, Rodman Foreman
Clifton Nelson, Laborer Foreman
Lewis K. Polley, Assistant Superintendent
Alfons A. Rider, Assistant Superintendent
W. M. Russell, Engineer and Purchasing Agent
David C. Tipton, Carpenter Foreman

Plaster Modeling Shop

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Arnolfo Fioravanti, Plaster Modeler
Quirino Fioravanti, Plaster Modeler
Harry H. Nagle, Plaster Modeler
Peter F. Coleman, Plaster Consultant

B. Altman & Co., Contractor for Furniture and Furnishings

John S. Burke, President
Charles T. Haight, Director, The Decorating Shop
Marguerite Watts, The Decorating Shop

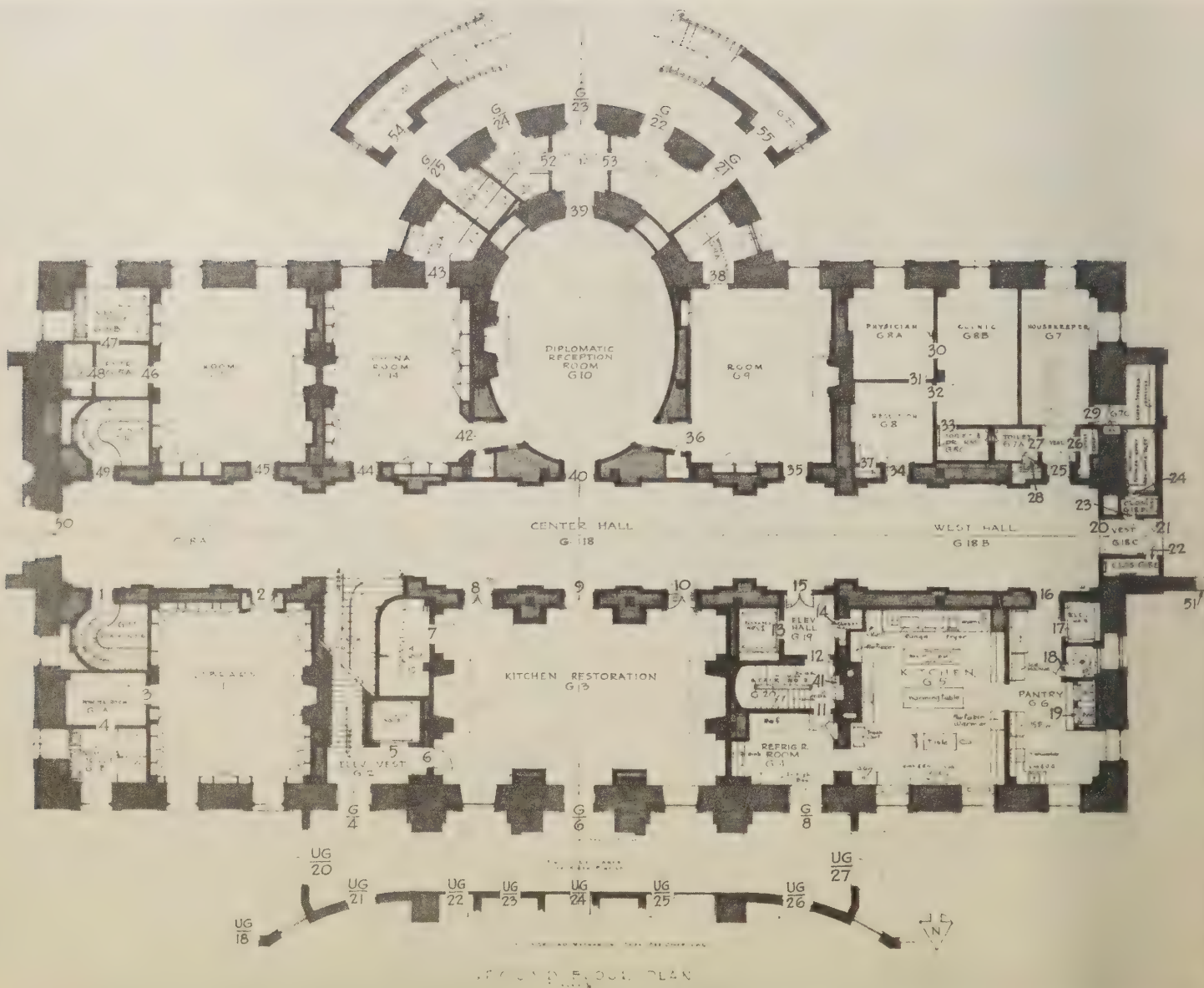
Subcontractors under the General Contract

M. C. Ackerman, Pittsburgh Plate Glass Co.
Claude B. Altemiller, Pittsburgh Plate Glass Co.
Edward Anderson, Knipp & Co.
Reuben L. Anderson, Reuben L. Anderson, Inc.
D. W. Baxter, Warren-Ehret Co.
Henry Bosna, Standard Engineering Co.
E. A. Bussard, O. R. Evans & Bro.
A. L. Cherne, Reuben L. Anderson, Inc.
C. R. Davidson, Gunit Construction Corp.
P. A. Davis, O. R. Evans & Bro.
Charles DiGiulian, Standard Art, Marble and Tile Co.
Raymond Duckworth, Easterday-Duckworth Roofing Co.
James W. Dunbar, William Dunbar Company

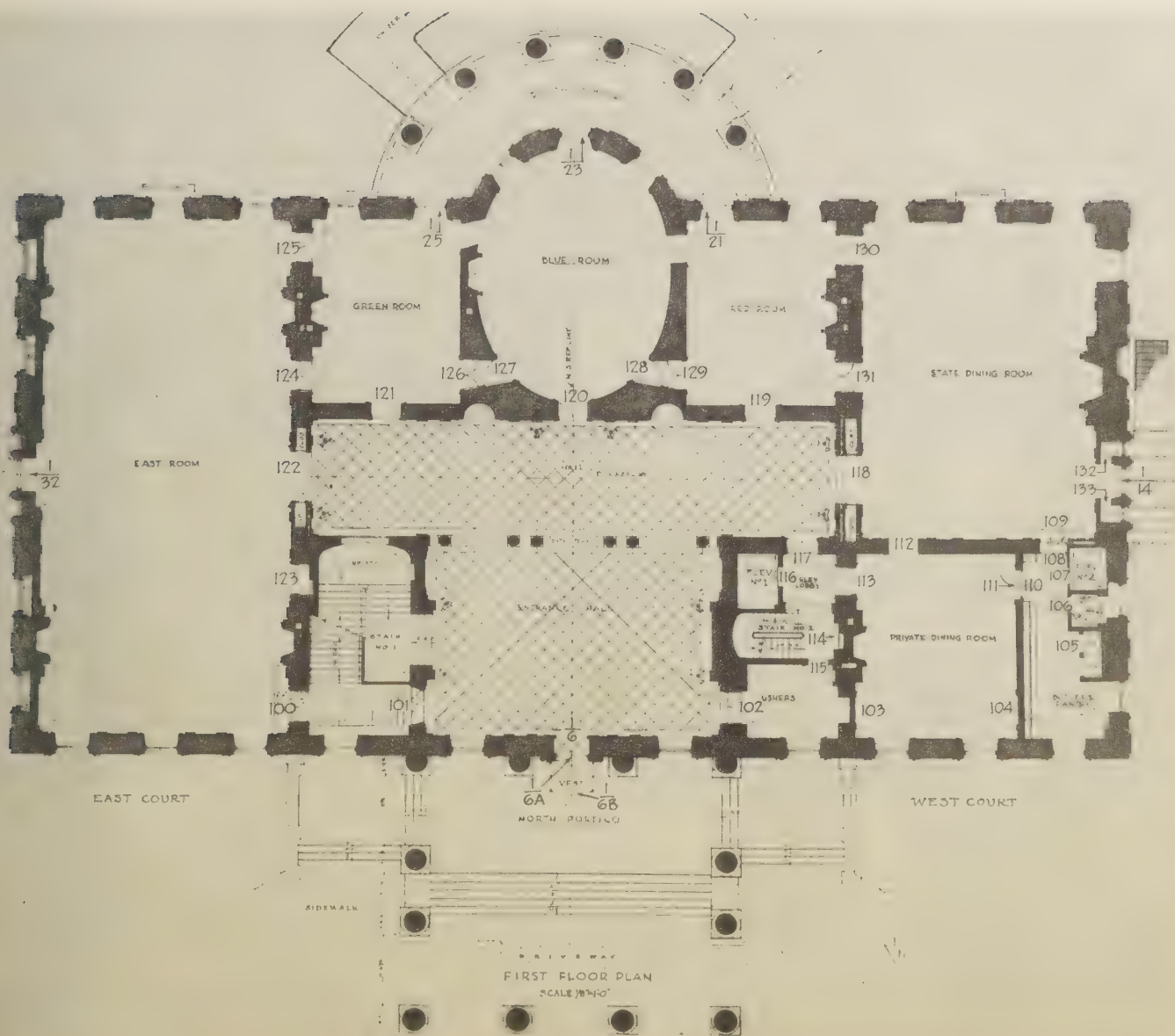
Subcontractors under the General Contract—Continued

H. R. Eck, A. F. Jorss Iron Works
W. W. Elliott, Rudolph and West Co.
O. Harrup, Bethlehem Steel Company
John Hasbrouck, John Hasbrouck Co.
Robert Heinl, Jr., G. M. Ketcham Mfg. Corp.
Arthur Jacobs, Reuben L. Anderson, Inc.
John W. Johnson, John W. Johnson, Inc.
Edward Kearney, Harry Alexander, Inc.
Michael Kenney, Spencer, White and Prentis, Inc.
A. W. Kerr, Reuben L. Anderson and Carlson Brothers Company
Franklin Knipp, Knipp & Co.
Howard Knipp, Knipp & Co.
J. H. Krebs, A. F. Jorss Iron Works
Harry H. Lynn, Mosler Safe Co.
Robert W. McChesney, Harry Alexander, Inc.
Samuel McCormick, McCormick Construction Co.
John McGowan, Nathan-Straus Duparquet Co.
Francis McMahon, Harry Alexander, Inc.
Robert E. Minte, Edward W. Minte Co.
Edward D. Moyle, Carlson Brothers Company
Peter Pirozzi, Peter Bratti Tile Co.
A. Potter, Edward F. Caldwell & Co.
Frank Poulter, Novinger, Inc., and James A. Kane Co.
Carl O. Romberg, McLeod and Romberg
John C. Sanders, Spencer, White and Prentis, Inc.
Anthony Scartini, McCormick Construction Co.
Eugene Shoup, John H. Hampshire Corp.
Arthur Soderstrom, Atlas Machine & Iron Works
Edward Spencer, Standard Art, Marble and Tile Co.
Winston B. Stephens, Jamestown Metal Products Co.
Charles Swanson, John Hasbrouck Co.
C. Sypes, Novinger, Inc., and James A. Kane Co.
John L. Tierney, John W. Johnson, Inc.
Joseph C. Weaver, Spencer, White and Prentis, Inc.
Robert Weir, Standard Art, Marble and Tile Co.
Harry E. Wellans, Otis Elevator Co.
Stephen Wheeler, Reuben L. Anderson, Inc.
Robert E. White, Spencer, White and Prentis, Inc.

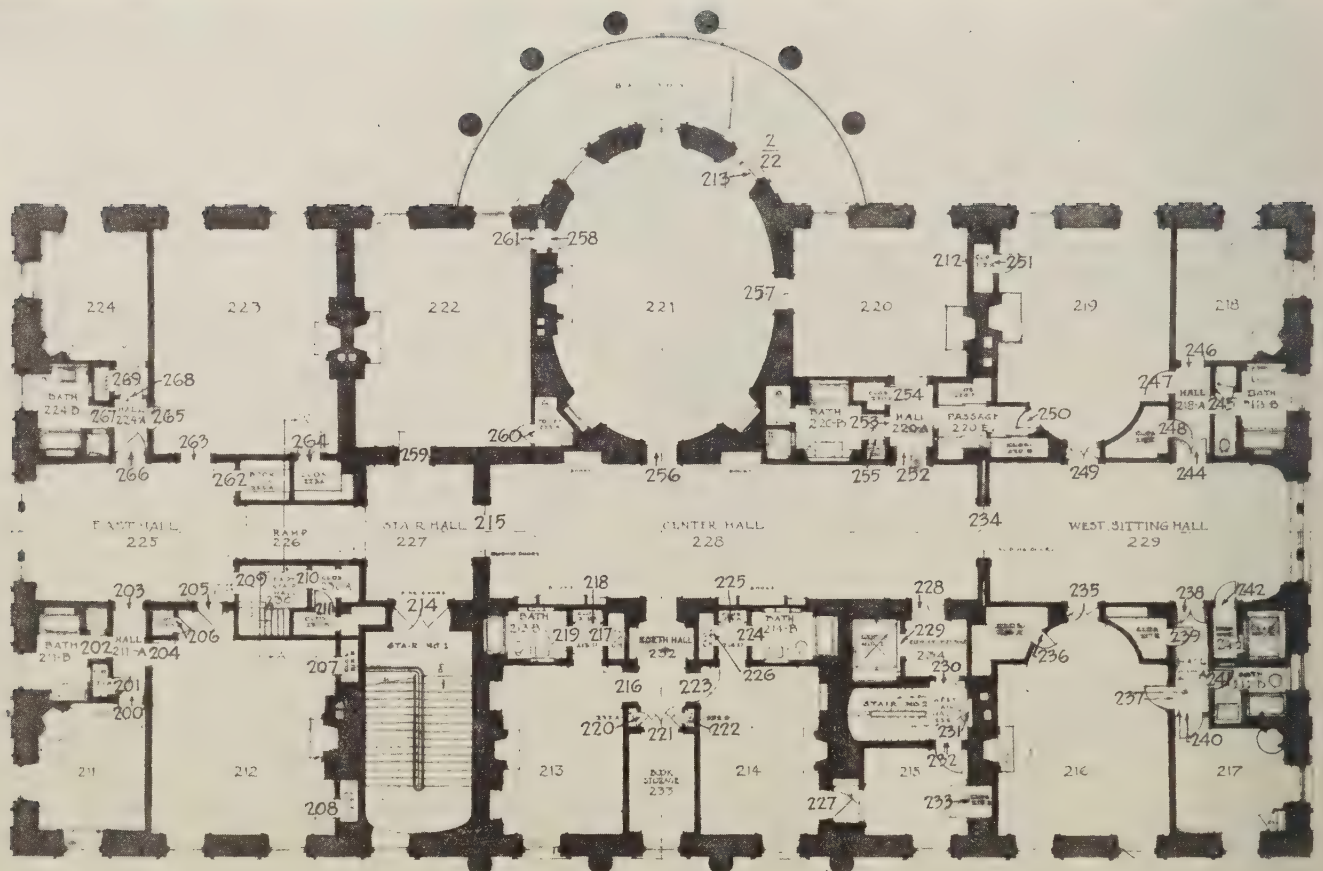
PLANS OF THE WHITE HOUSE



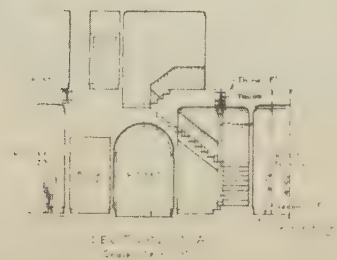
Ground Floor Plan



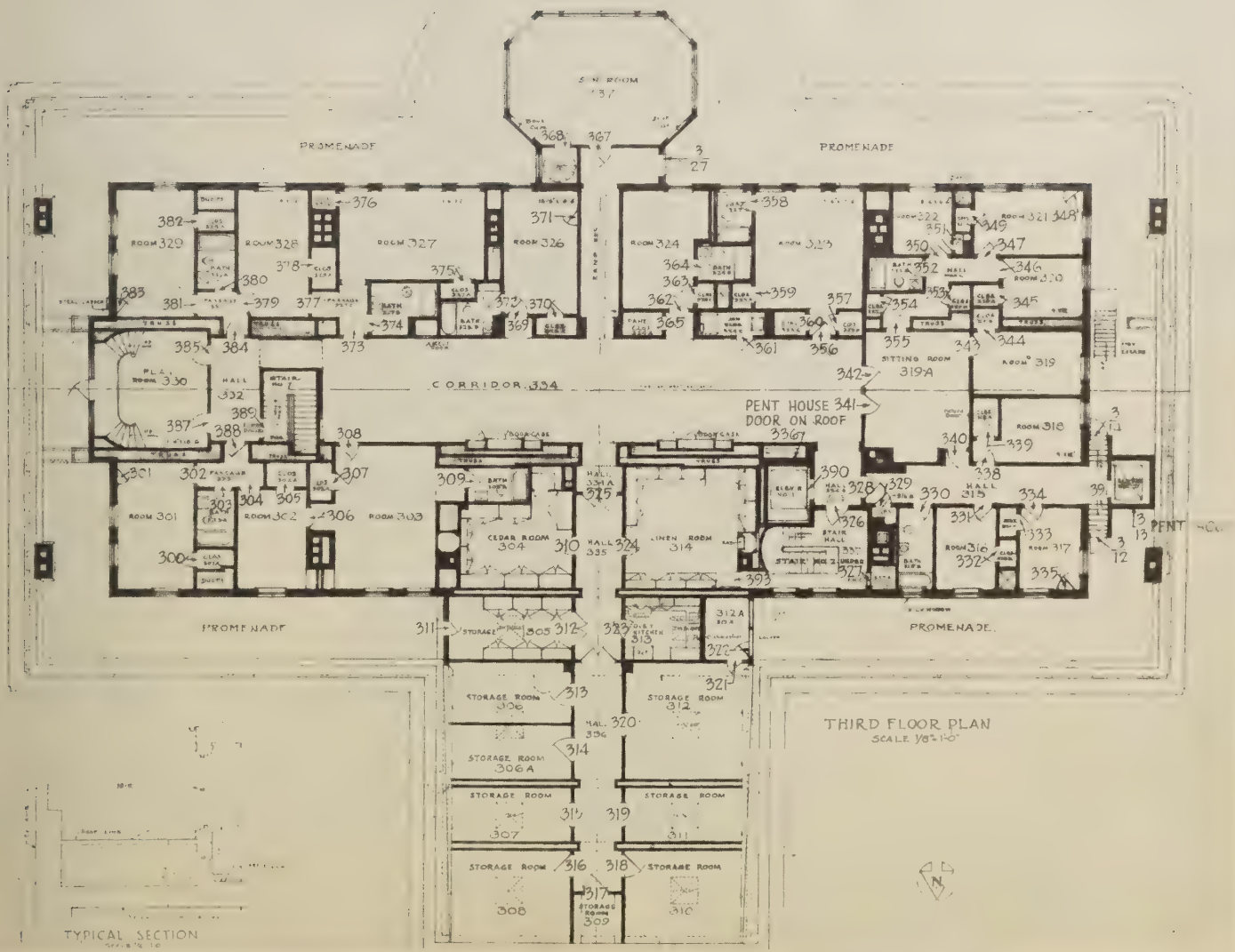
First Floor Plan



SECOND FLOOR PLAN
SCALE 1/8" = 1'-0"



Second Floor Plan



Third Floor Plan



Chandelier in East Room



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